

Unclassified

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Declassified on June 14, 2001 by the
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IAW EO 12958

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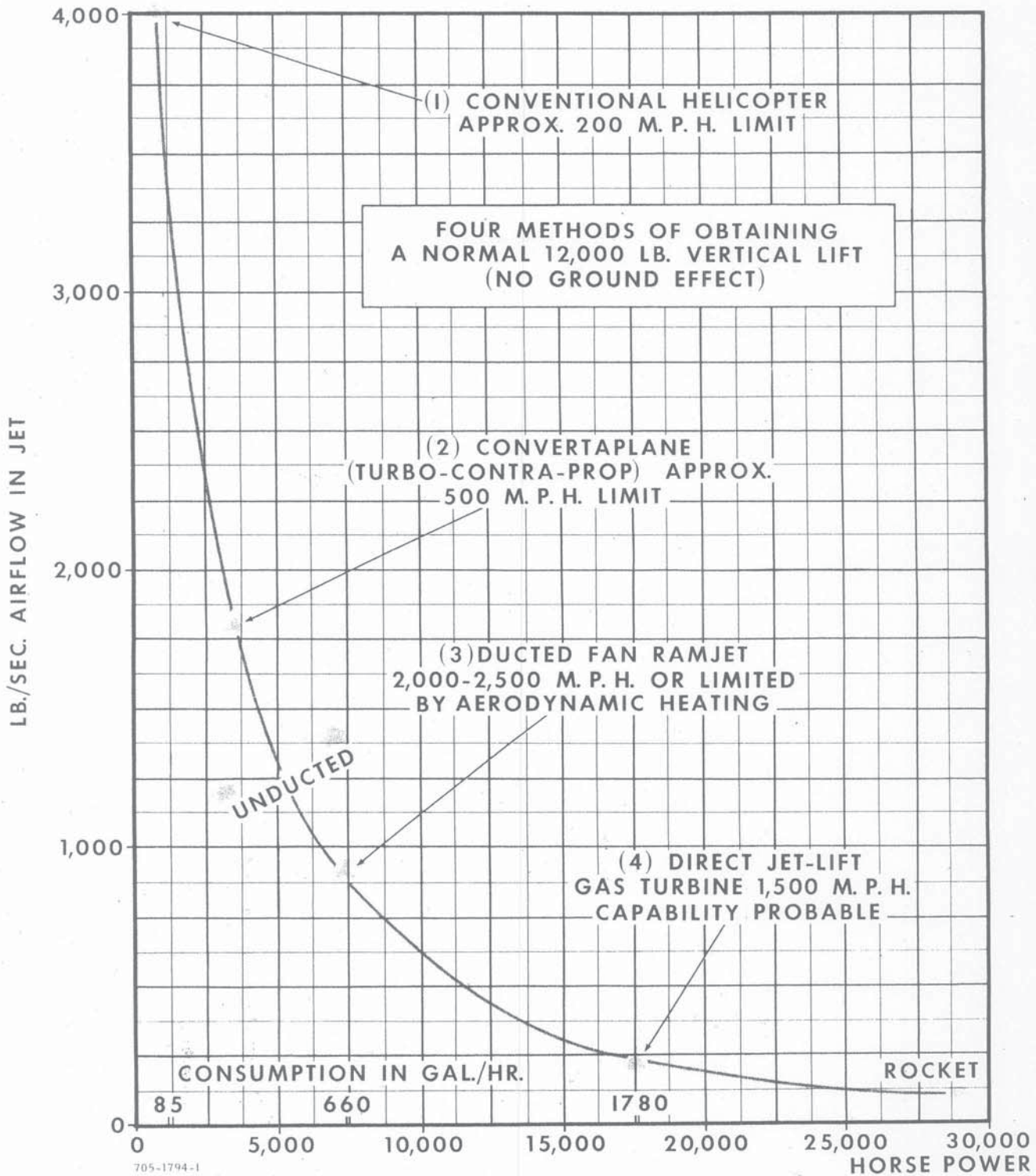
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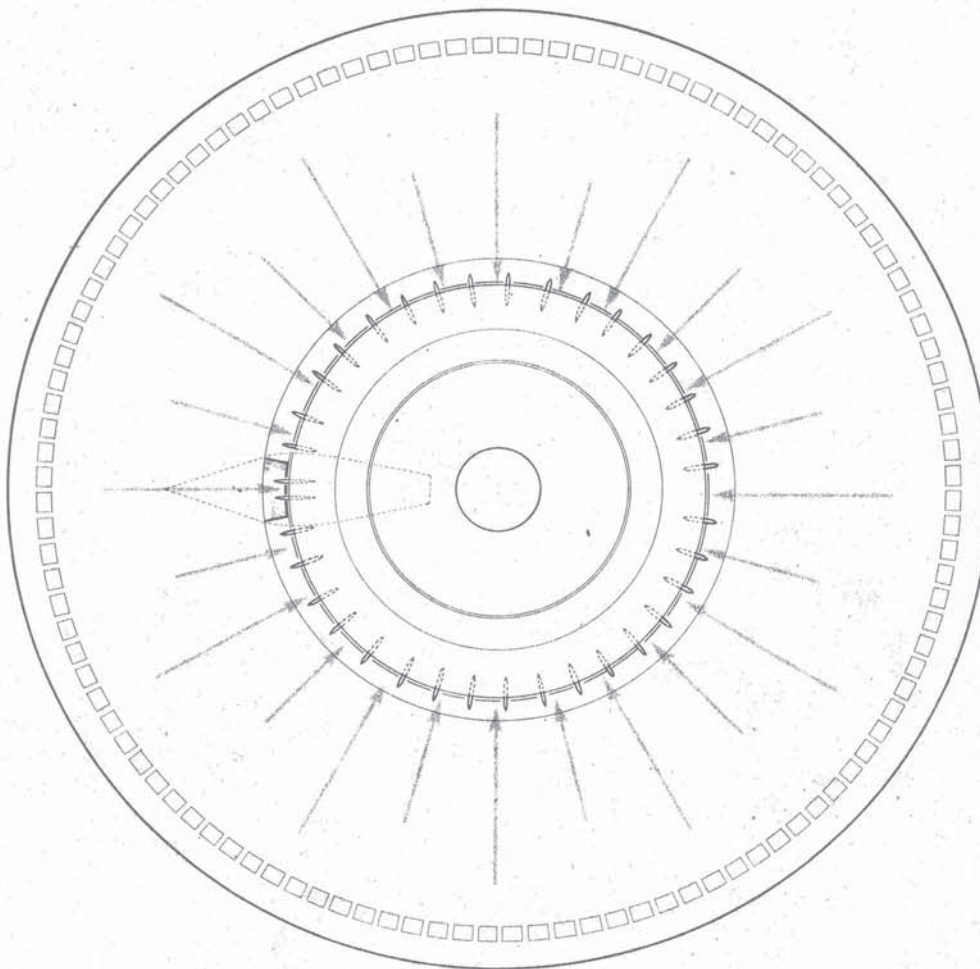
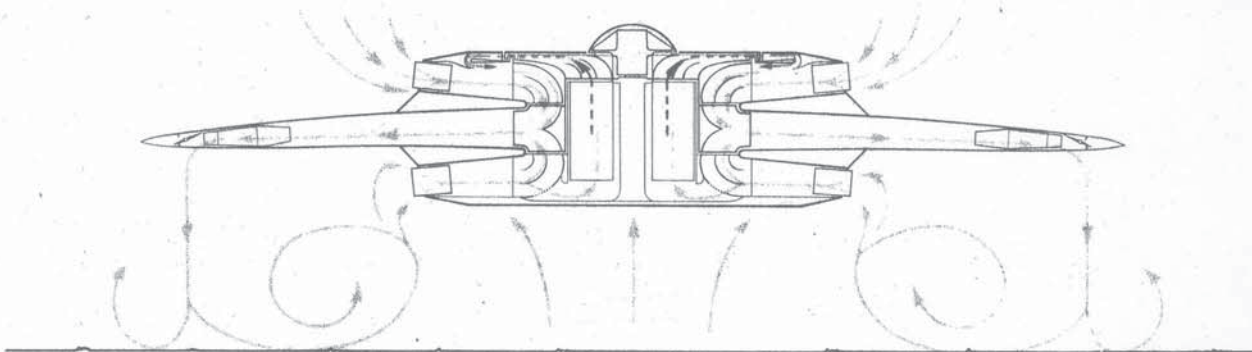


V.T.O. EFFICIENCY CHART

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720-1794-1

**FLOW DISTRIBUTION-HOVERING
AND GROUND CUSHION**

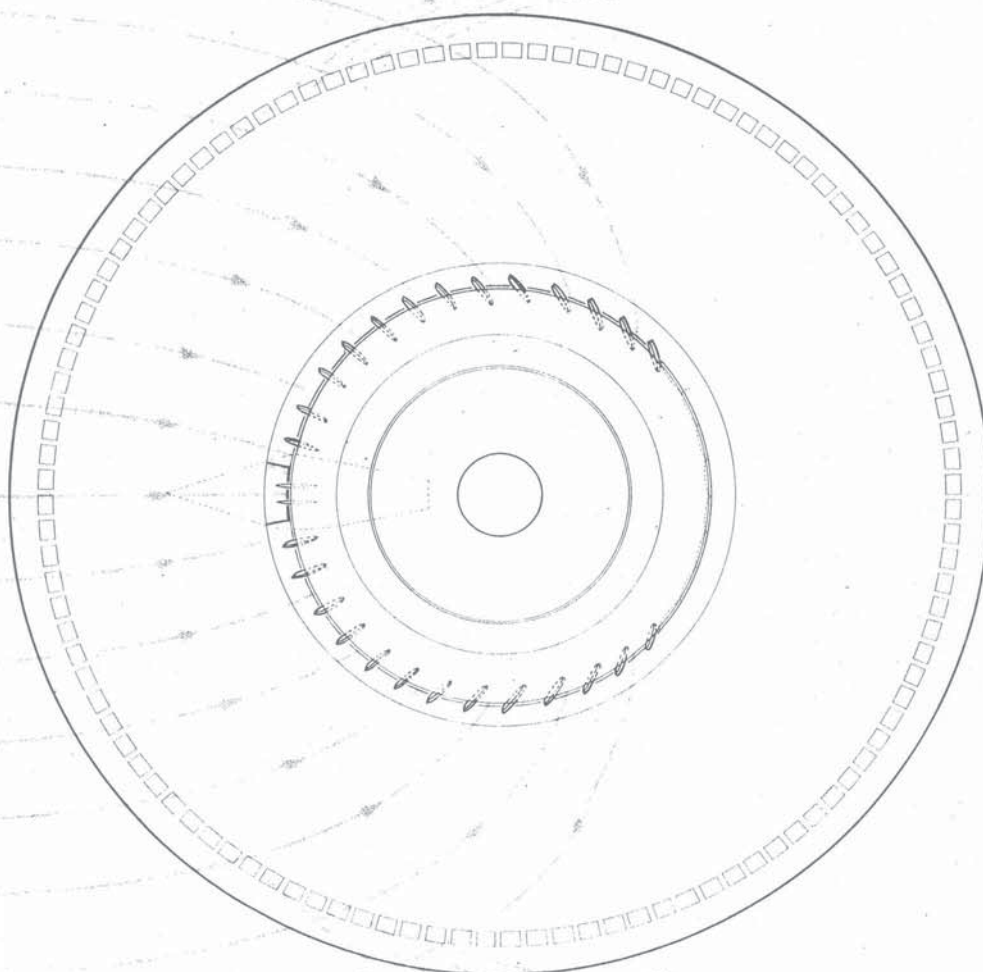
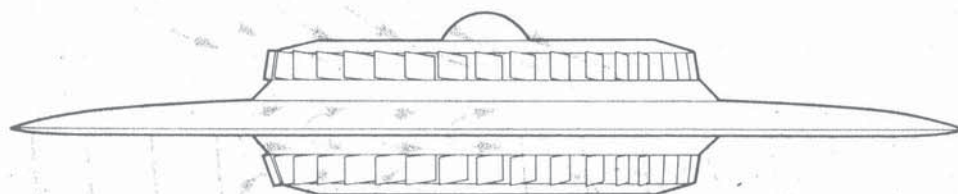
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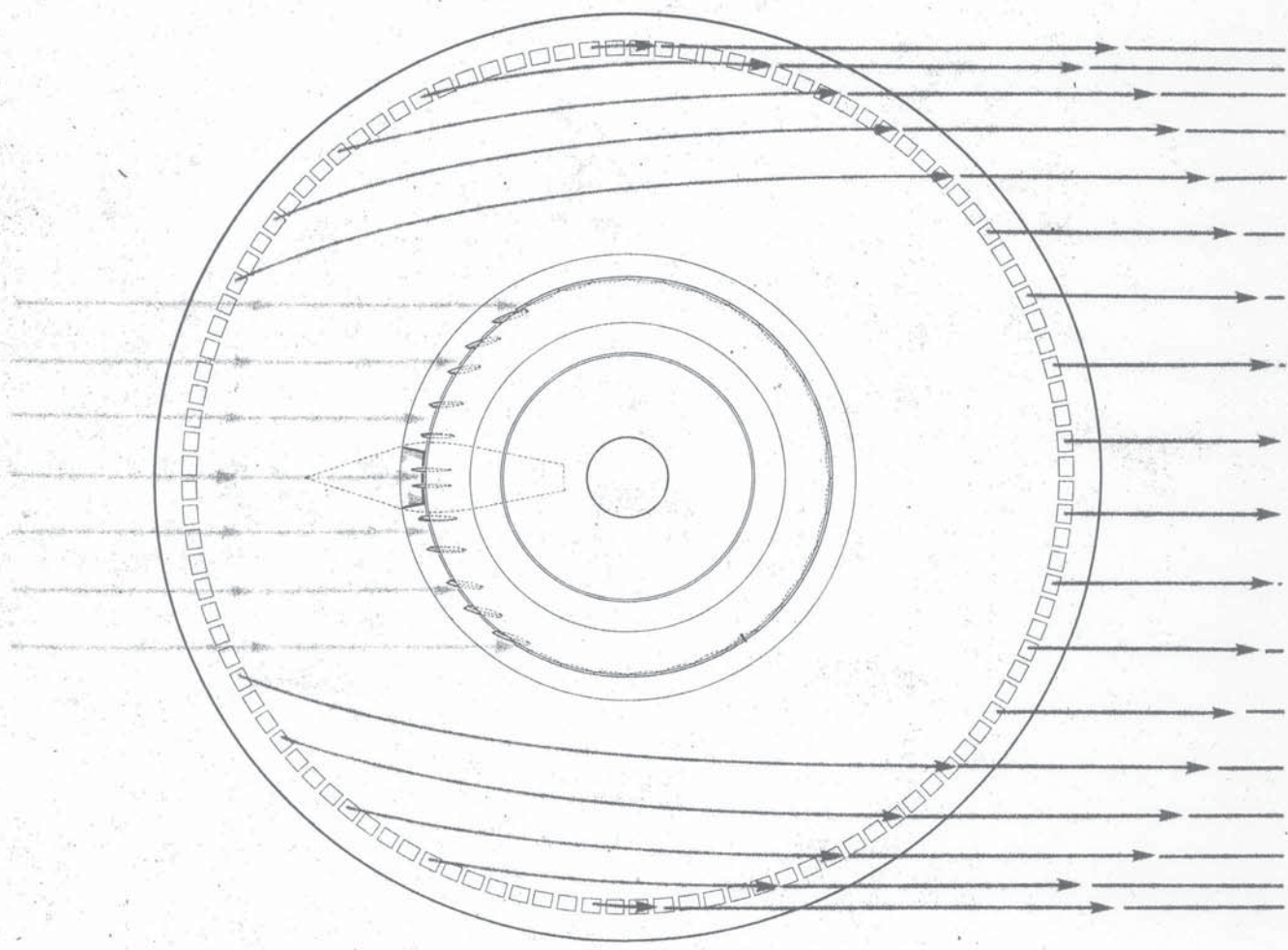
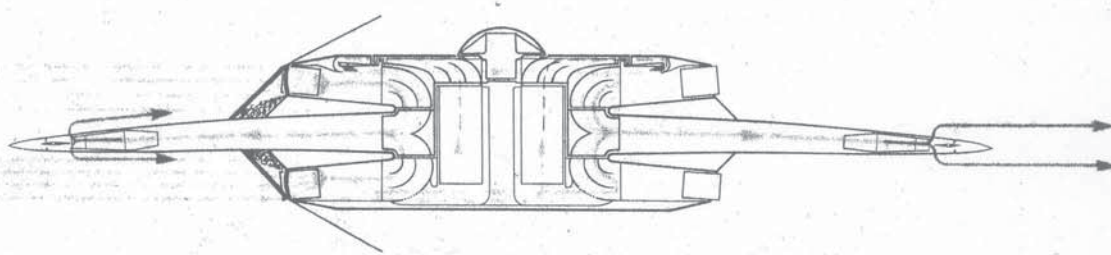
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**TRANSITION TO FORWARD FLIGHT
FROM GROUND CUSHION**

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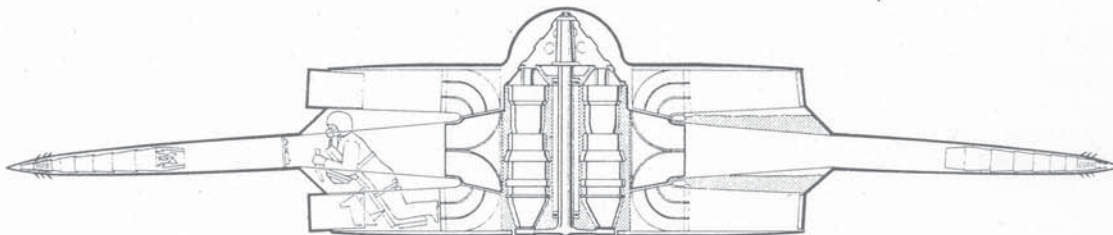
AIRFLOW IN FORWARD FLIGHT

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1019-1794-1

**2 VIEW GENERAL ARRANGEMENT
-33 FT. AIRCRAFT SCHEMATIC**

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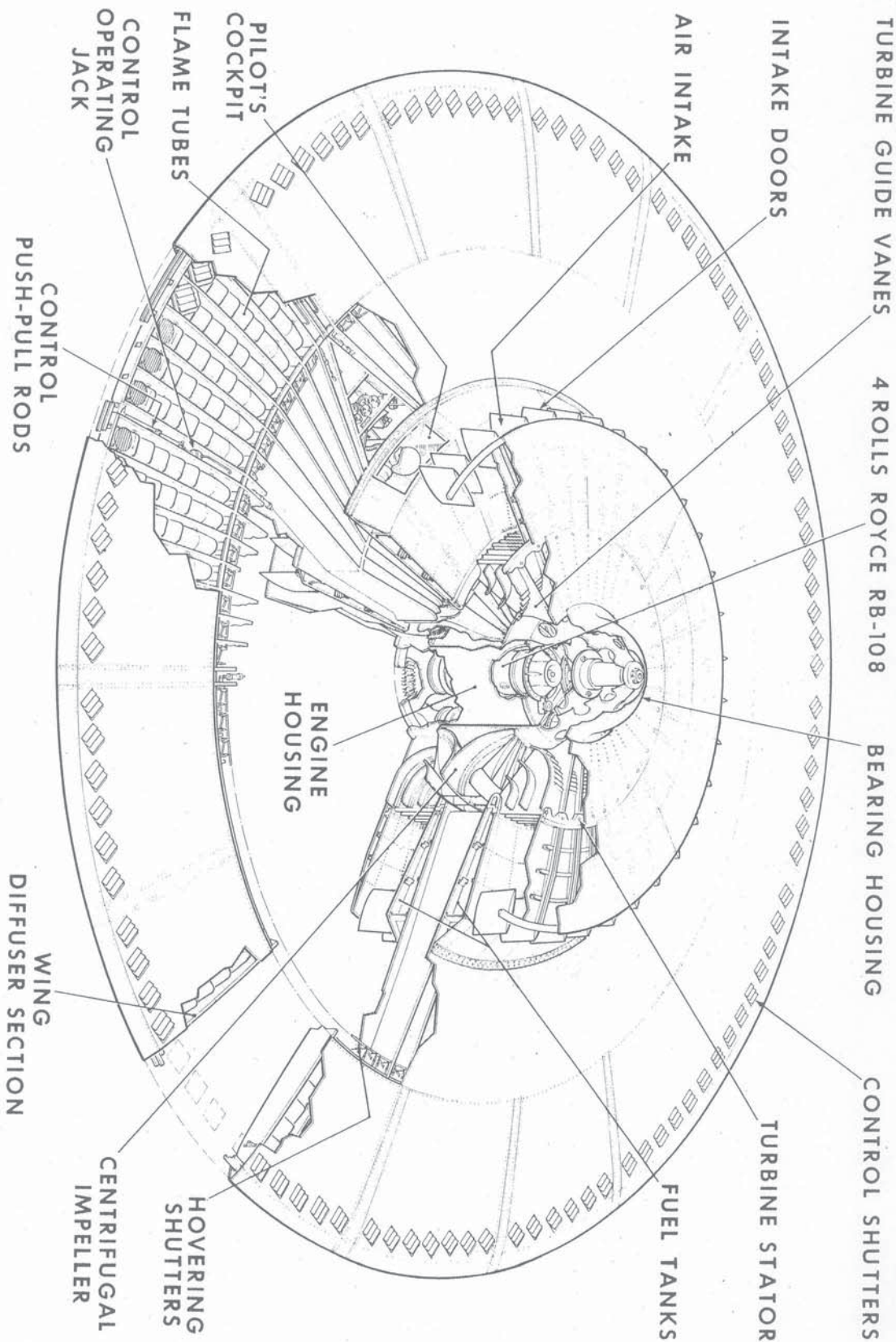
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RAMJET AIRCRAFT-DUCTED FAN ASSISTED

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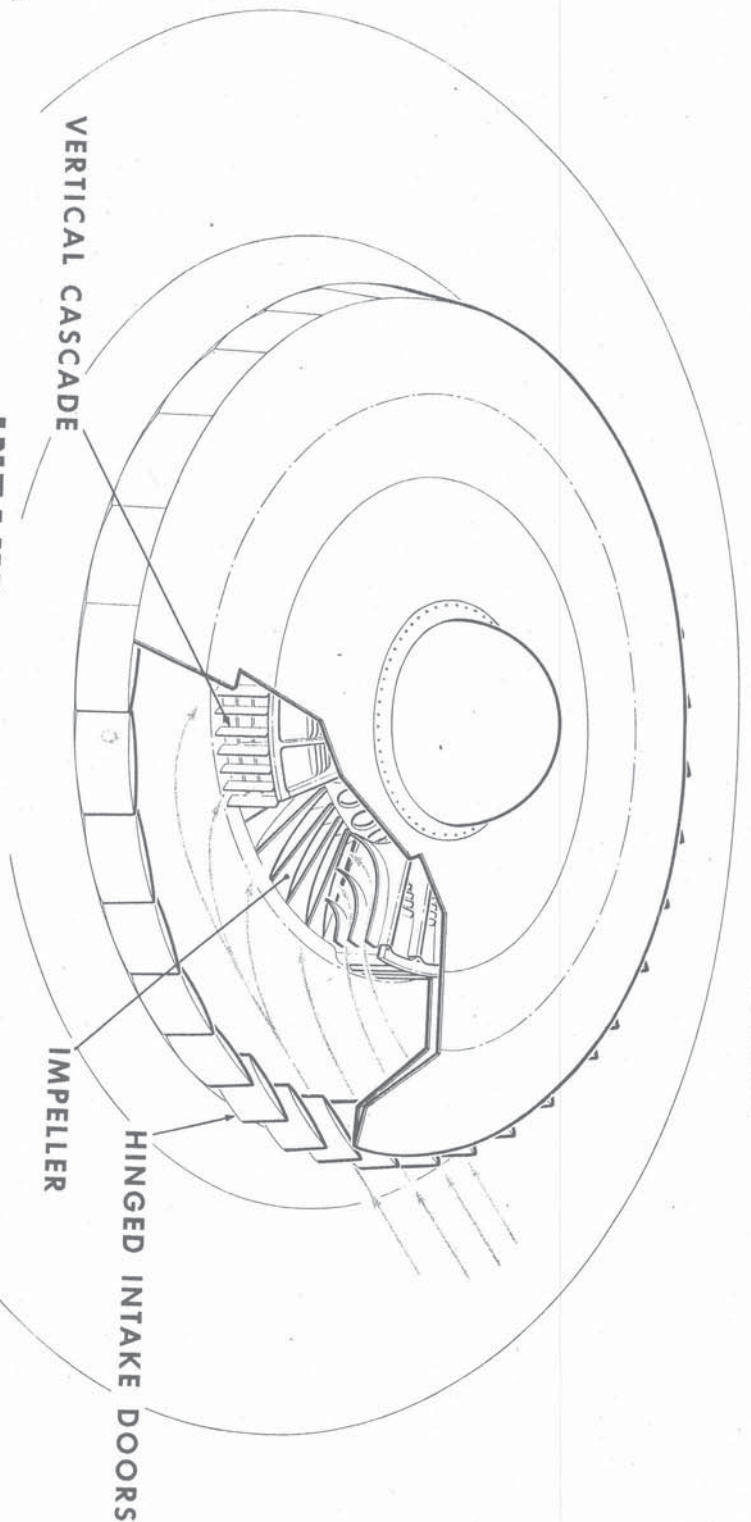
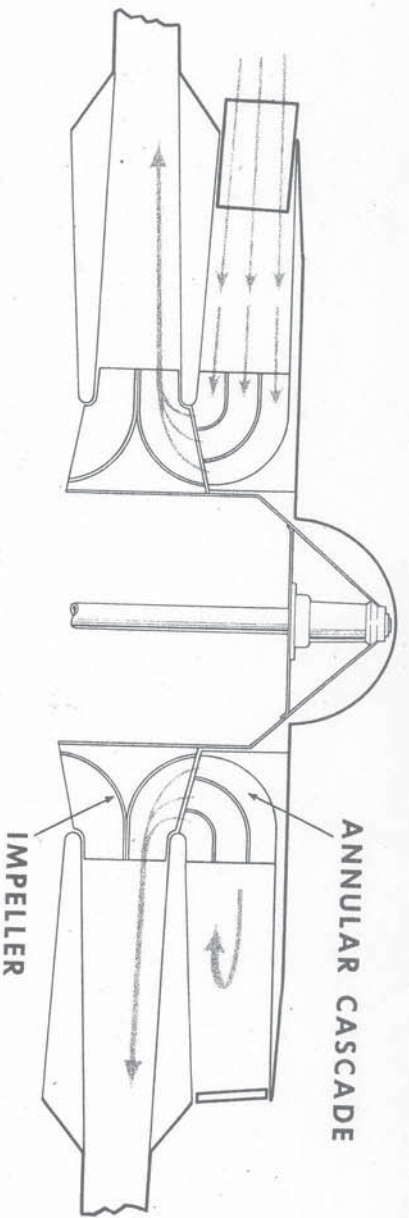
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INTAKE ARRANGEMENT

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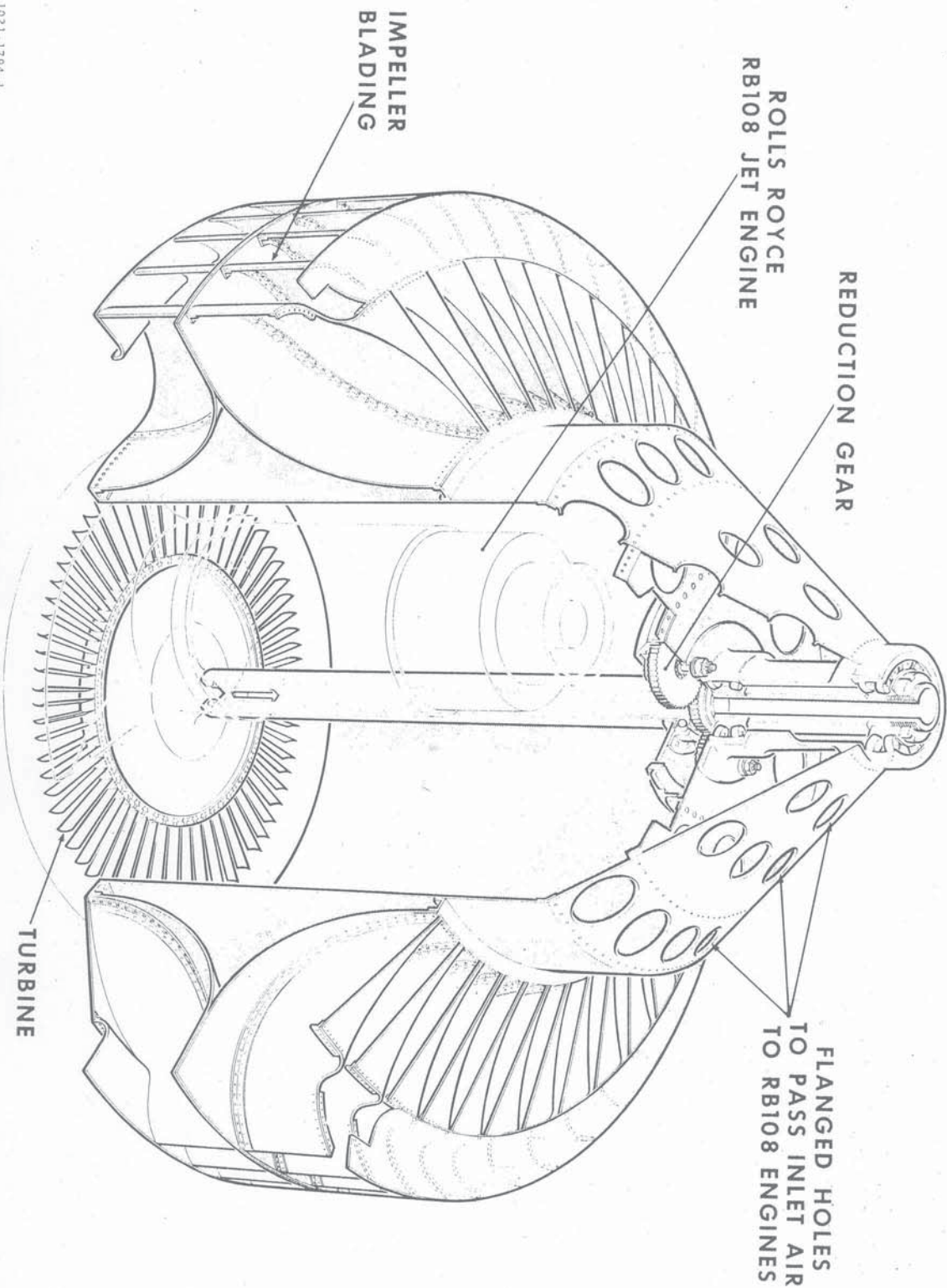
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ROLLS ROYCE
RB108 JET ENGINE

REDUCTION GEAR

FLANGED HOLES
TO PASS INLET AIR
TO RB108 ENGINES

IMPELLER
BLADING

TURBINE

1021-1794-1

IMPELLER AND TURBINE ASSEMBLY

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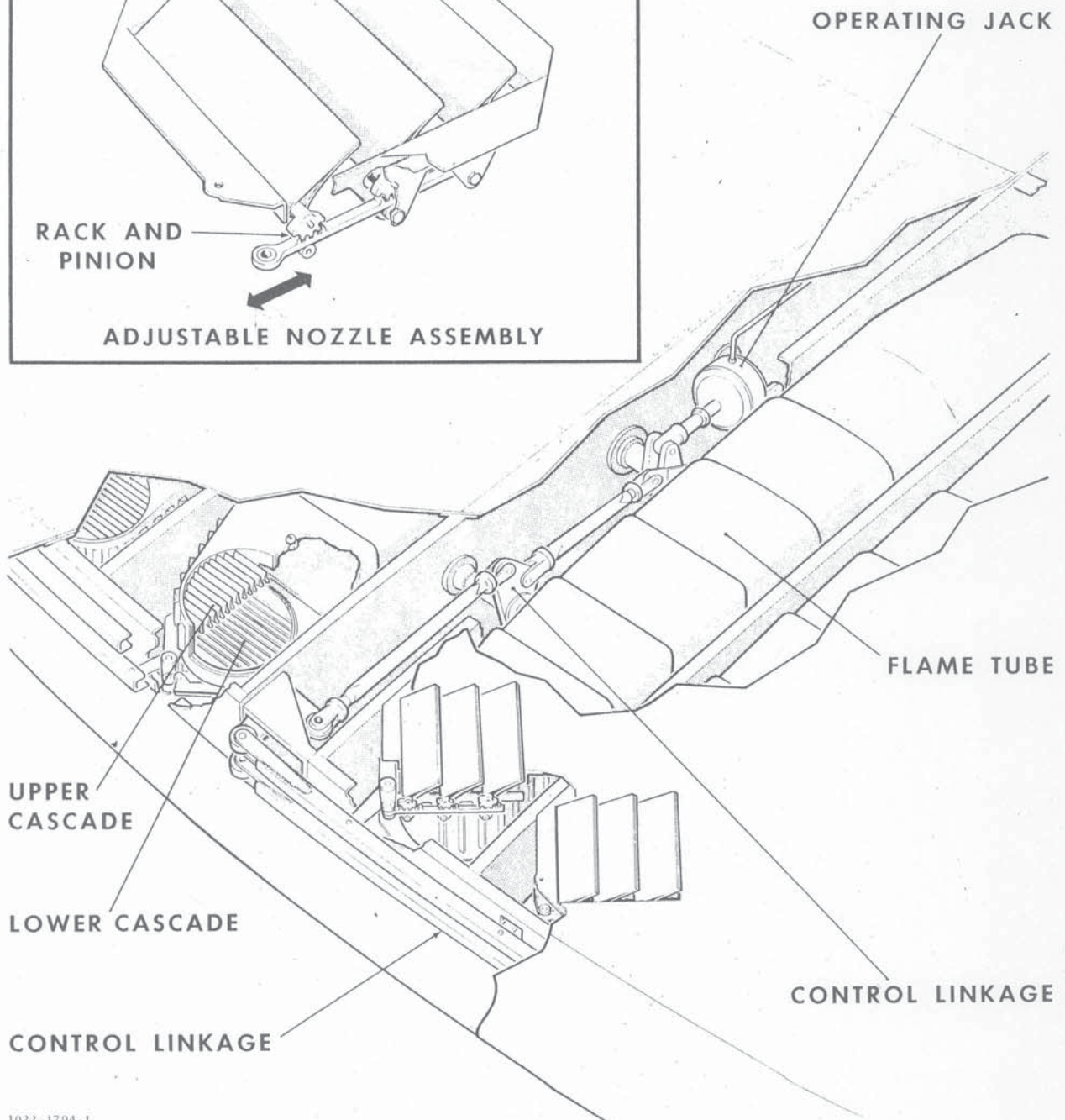
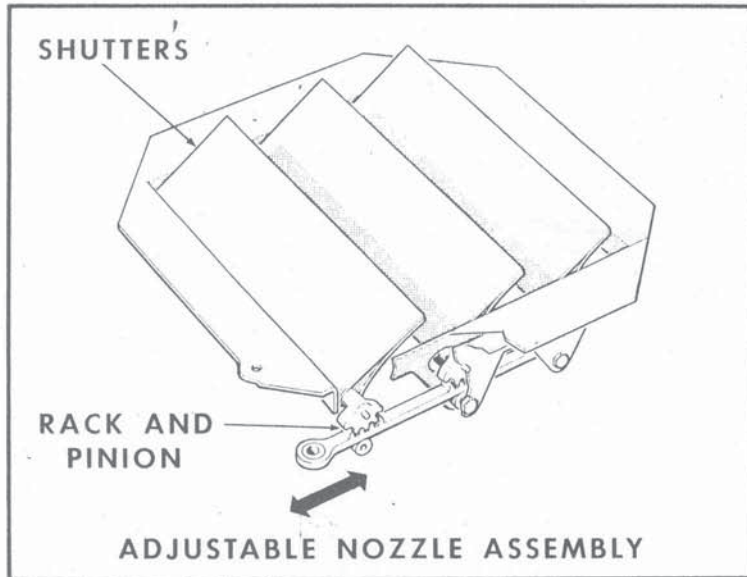
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FLAME TUBE AND FINAL NOZZLE ASSEMBLY

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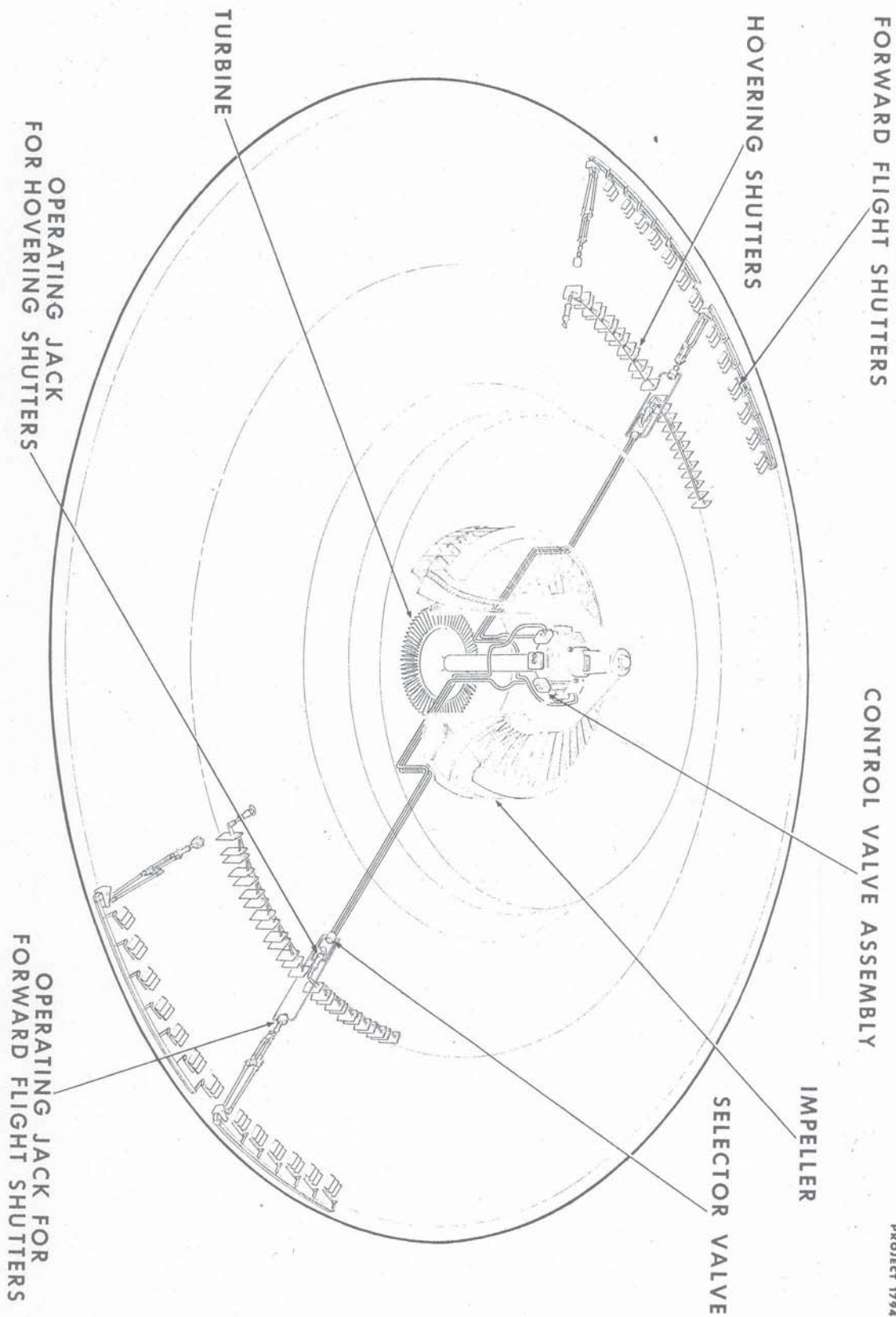
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TYPICAL ARRANGEMENT OF CONTROL ASSEMBLY

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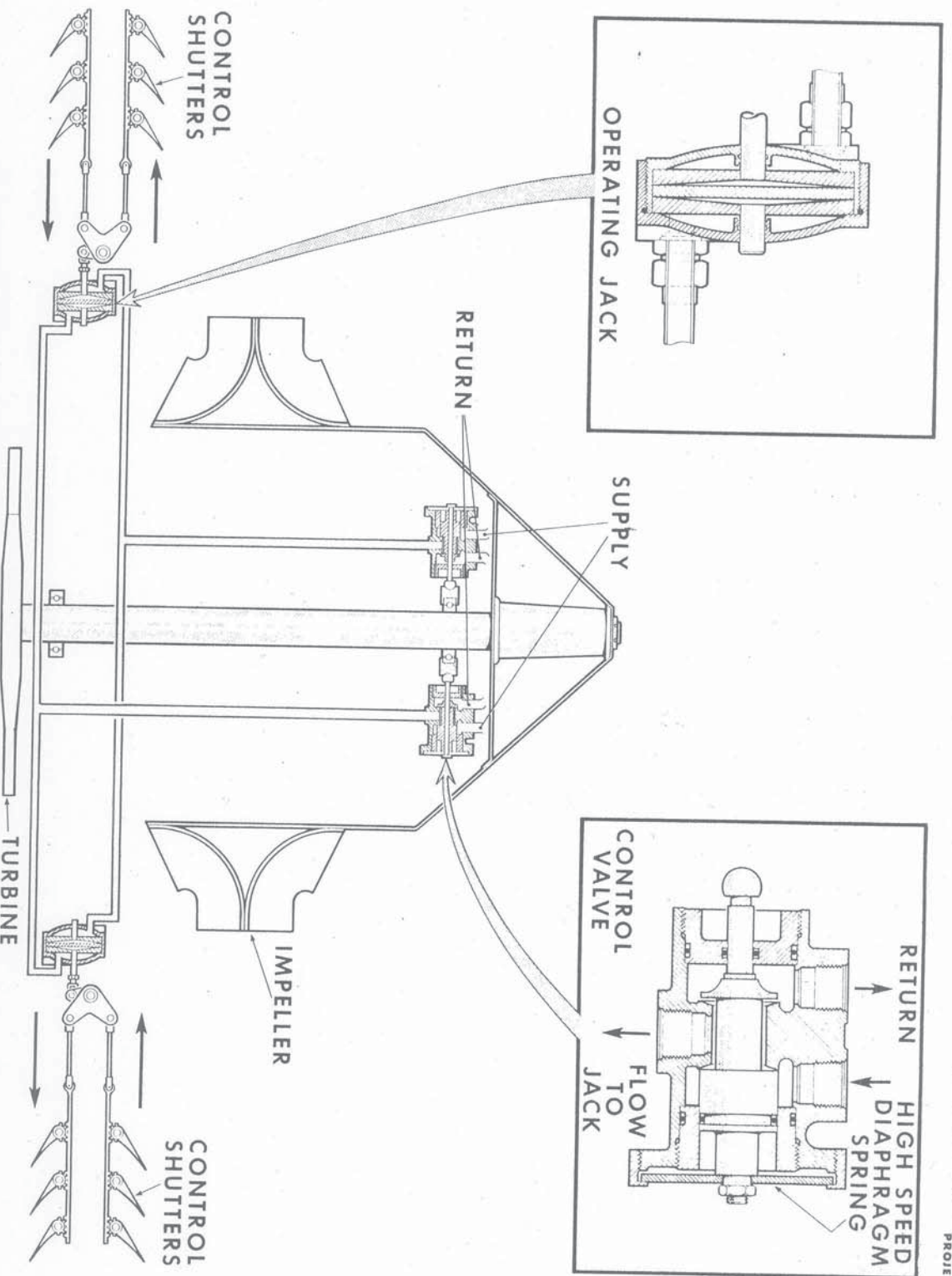
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SCHEMATIC DIAGRAM OF STABILIZER SYSTEM

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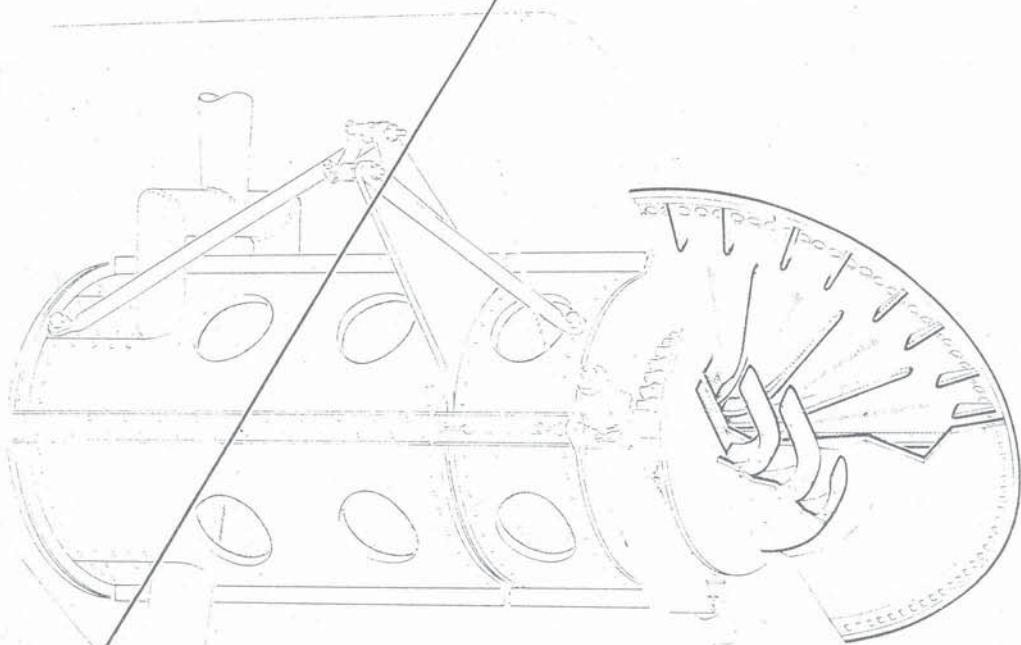
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6TH SCALE SUBSONIC MODEL

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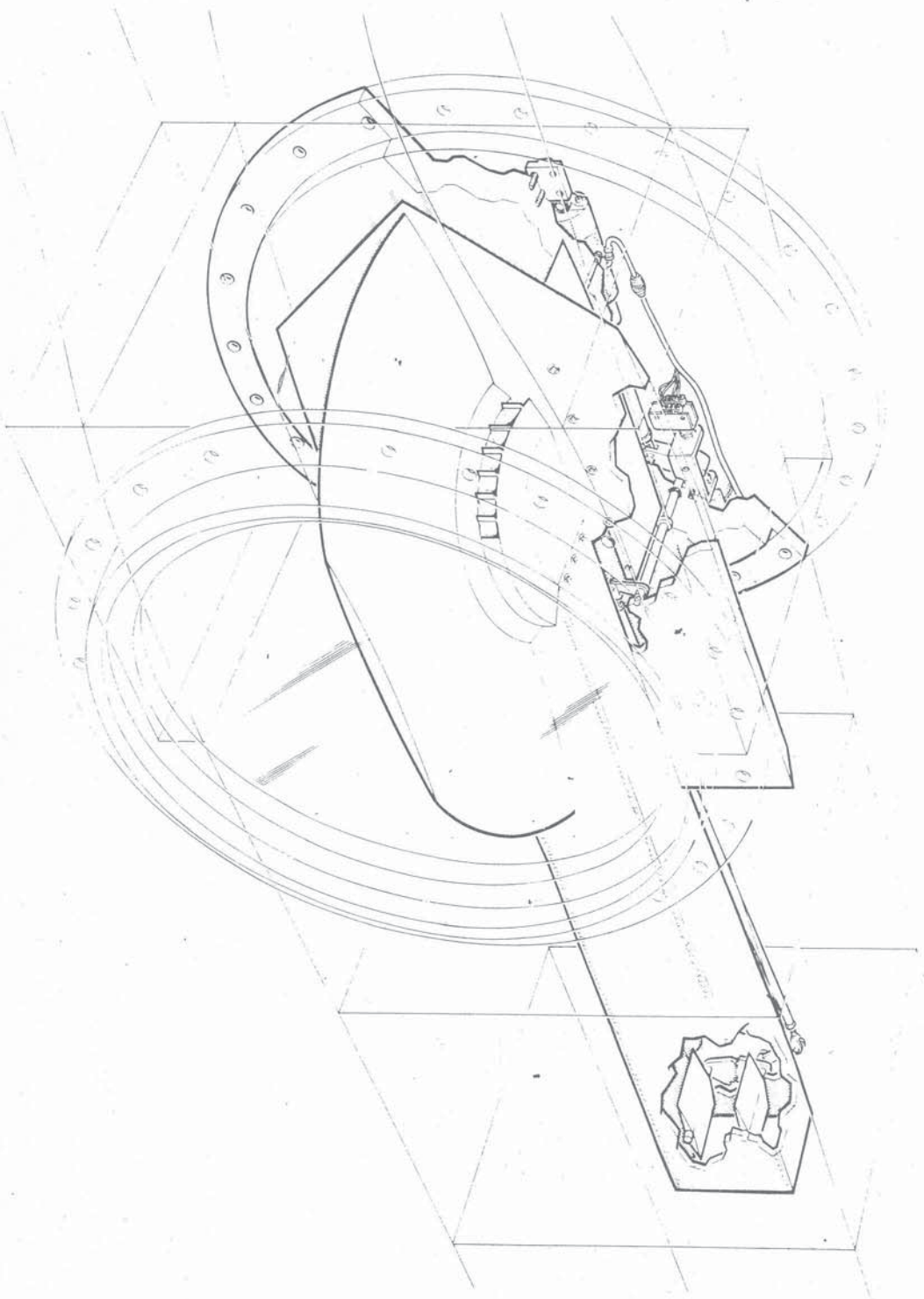
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INTAKE MODEL

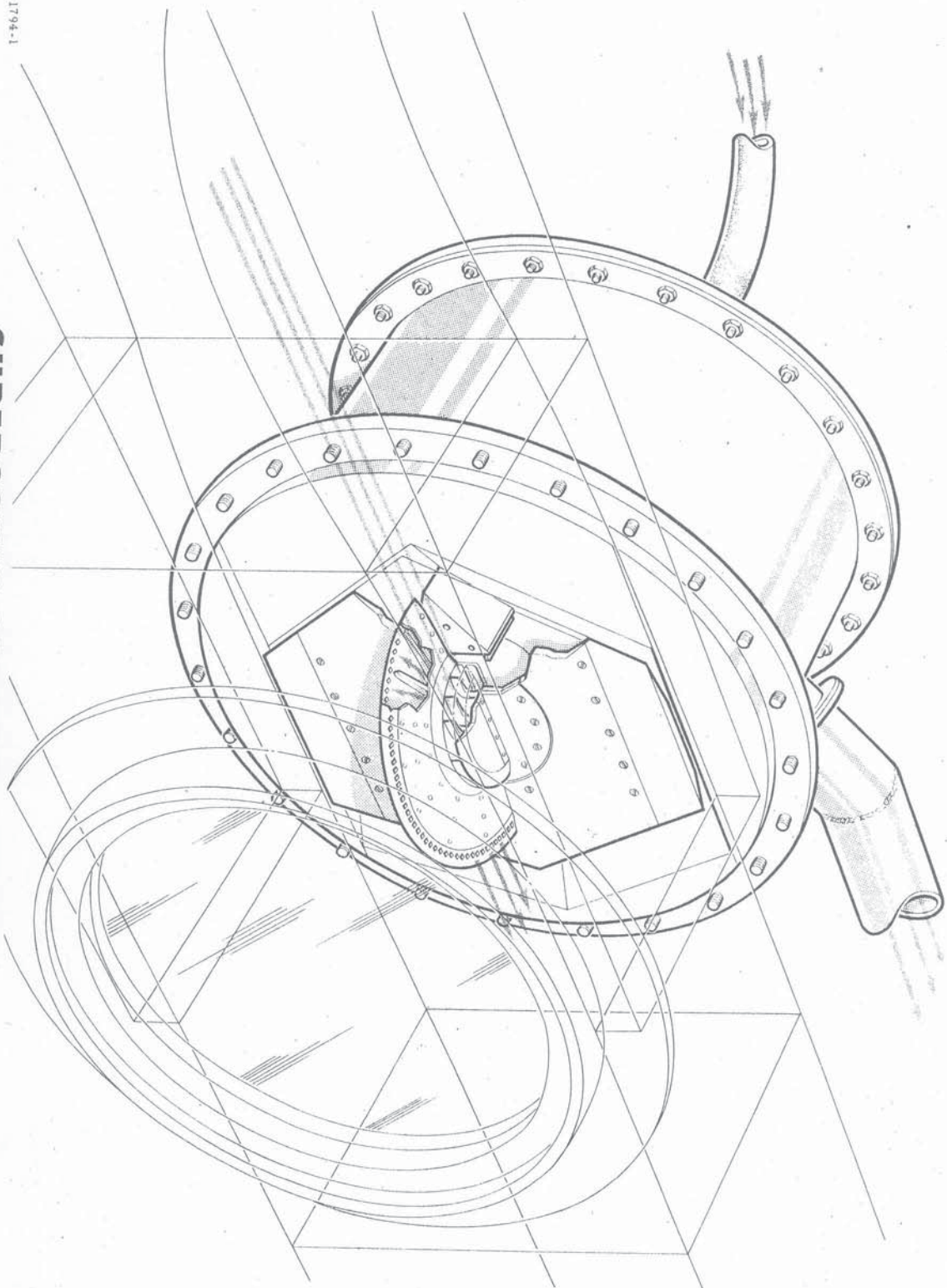
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SUPERSONIC CONTROL MODEL

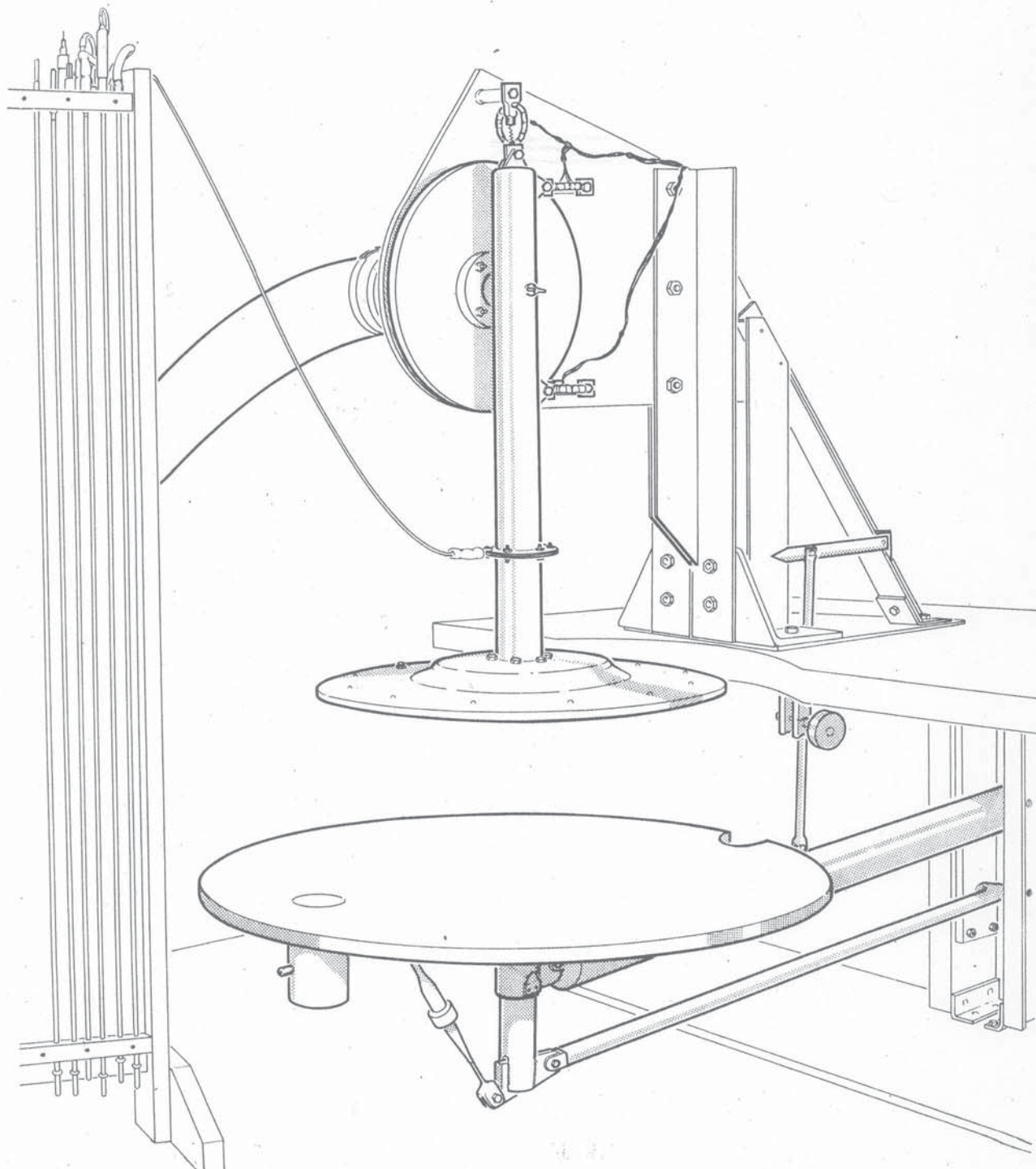
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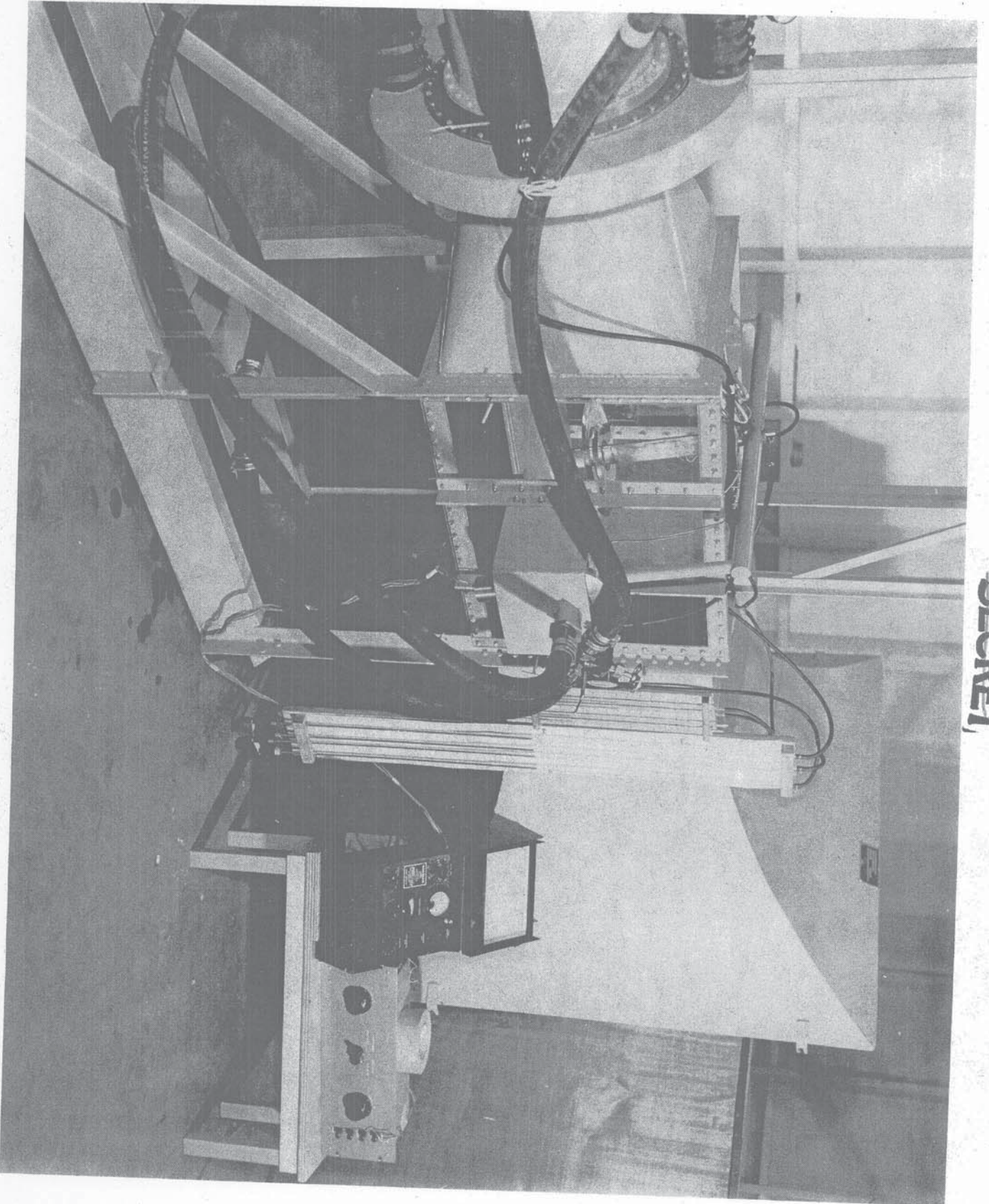
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GROUND EFFECTS MODEL
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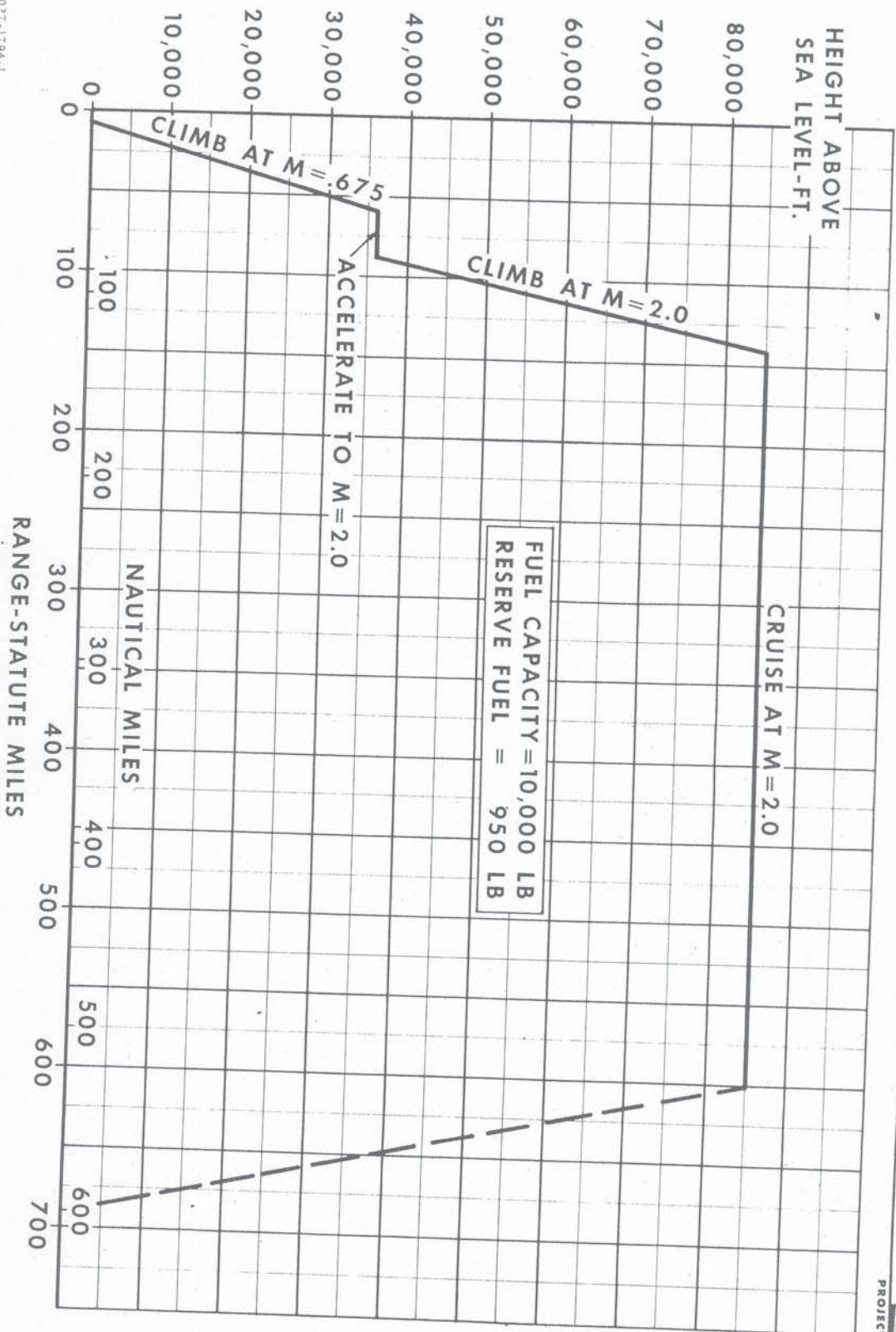
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4 RB108 DUCTED FAN-RAMJET AIRCRAFT STILL AIR RANGE

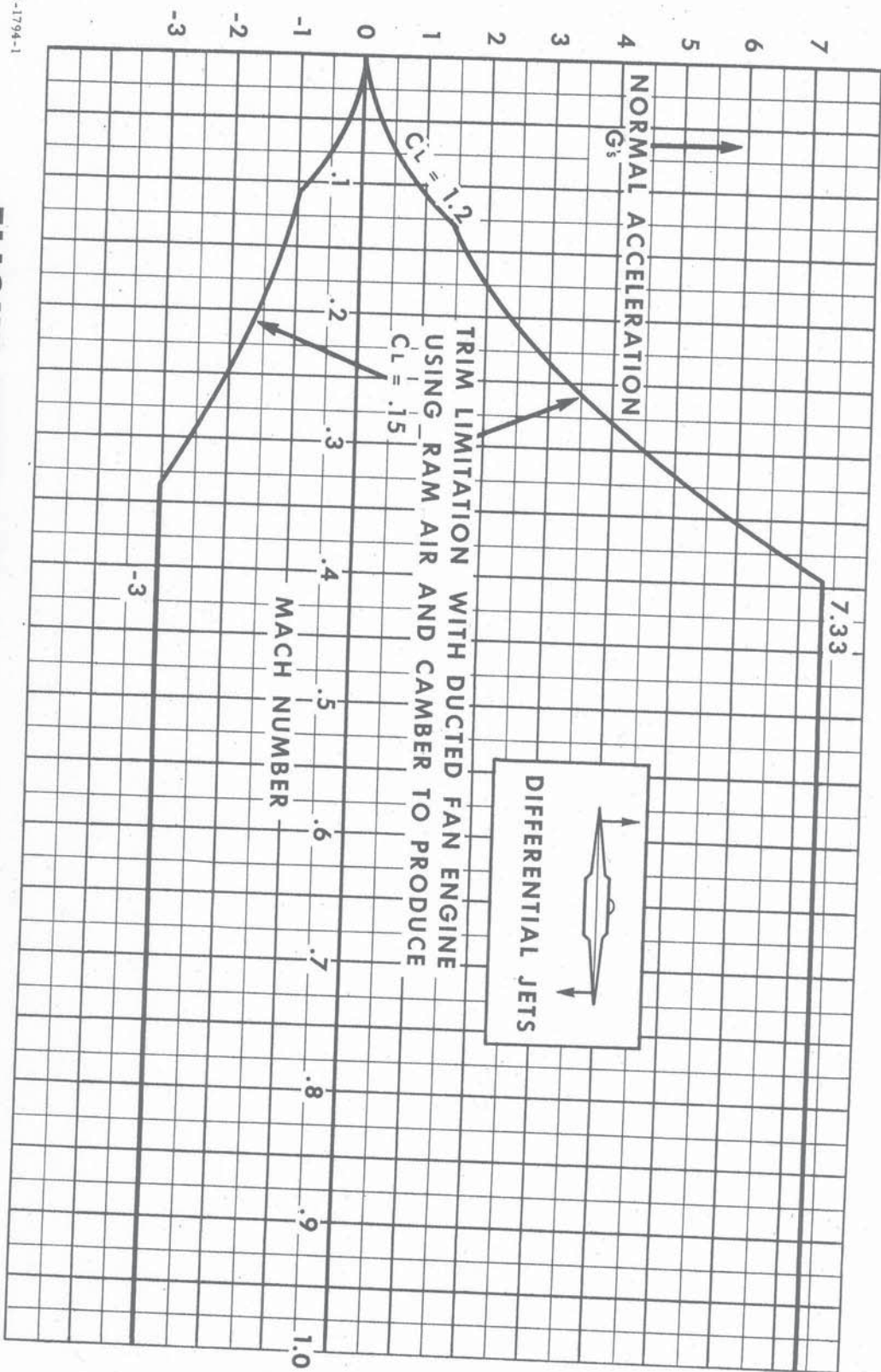
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FLIGHT ENVELOPE OF DUCTED FAN AIRCRAFT USING RAM AIR AT SEA LEVEL

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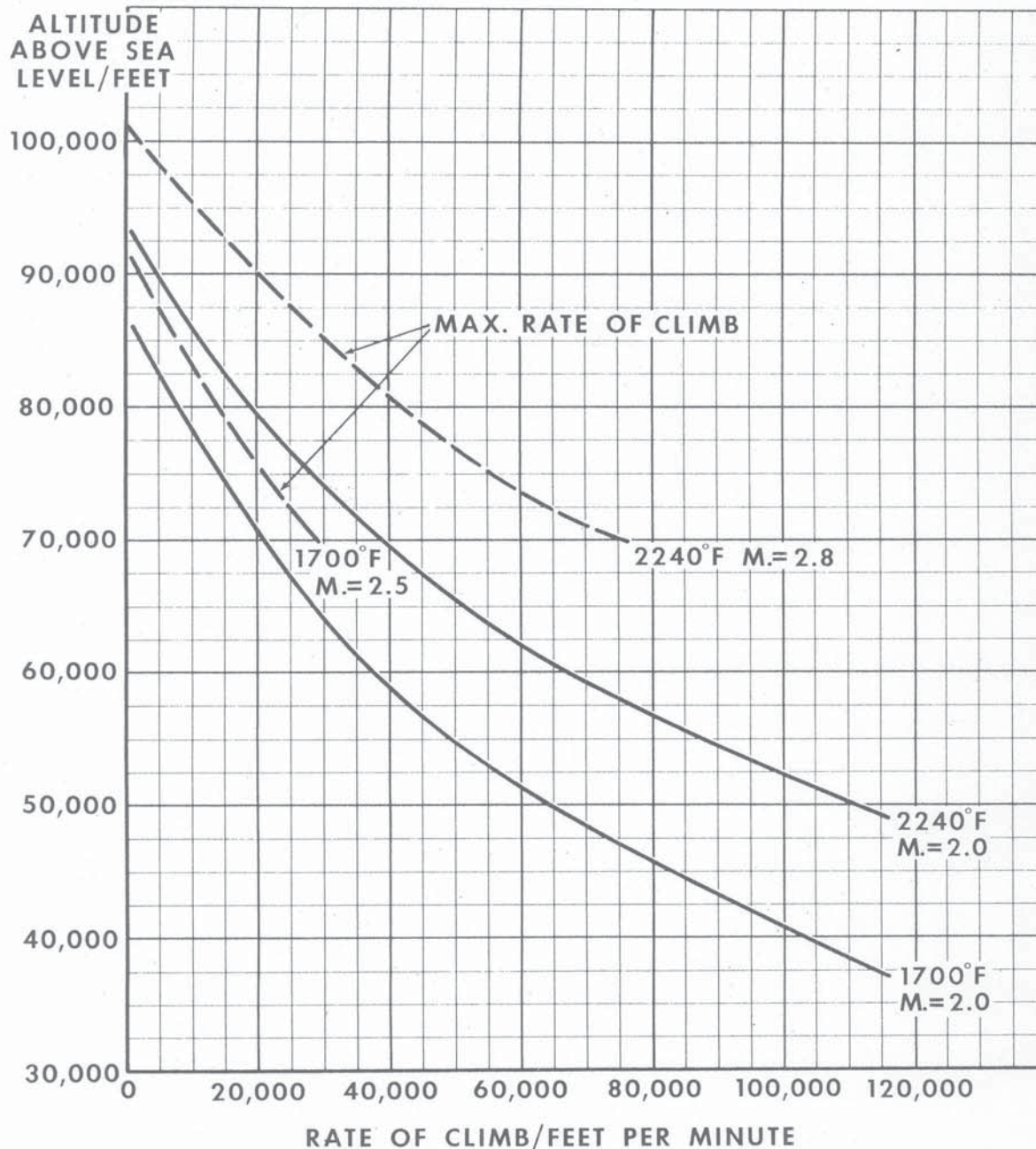
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**4 RB 108 DUCTED FAN RAMJET AIRCRAFT
RATE OF CLIMB VS ALTITUDE**

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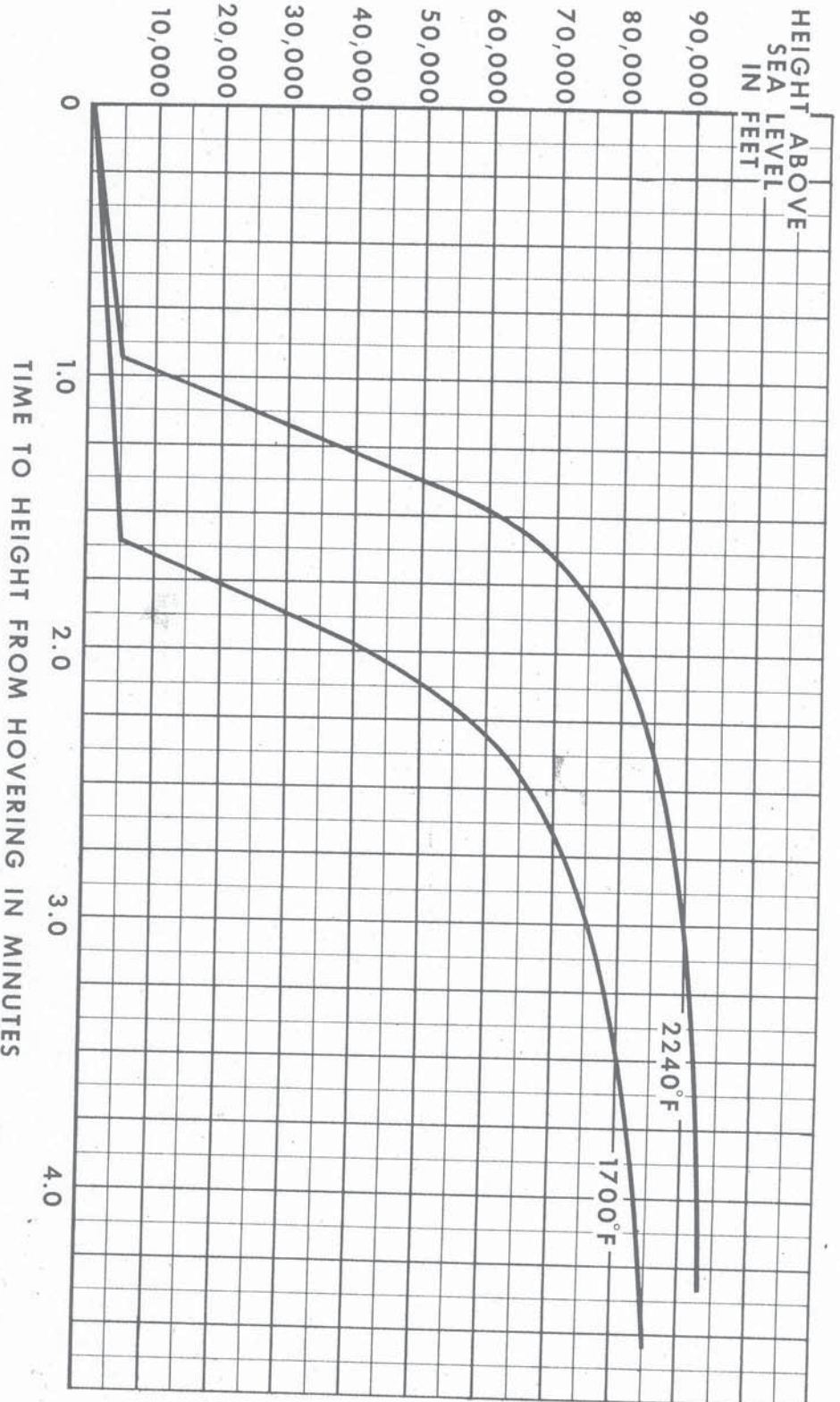
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**4RB108 DUCTED FAN RAMJET
AIRCRAFT TIME TO HEIGHT AND M=2.0
FROM HOVERING AT SEA LEVEL**

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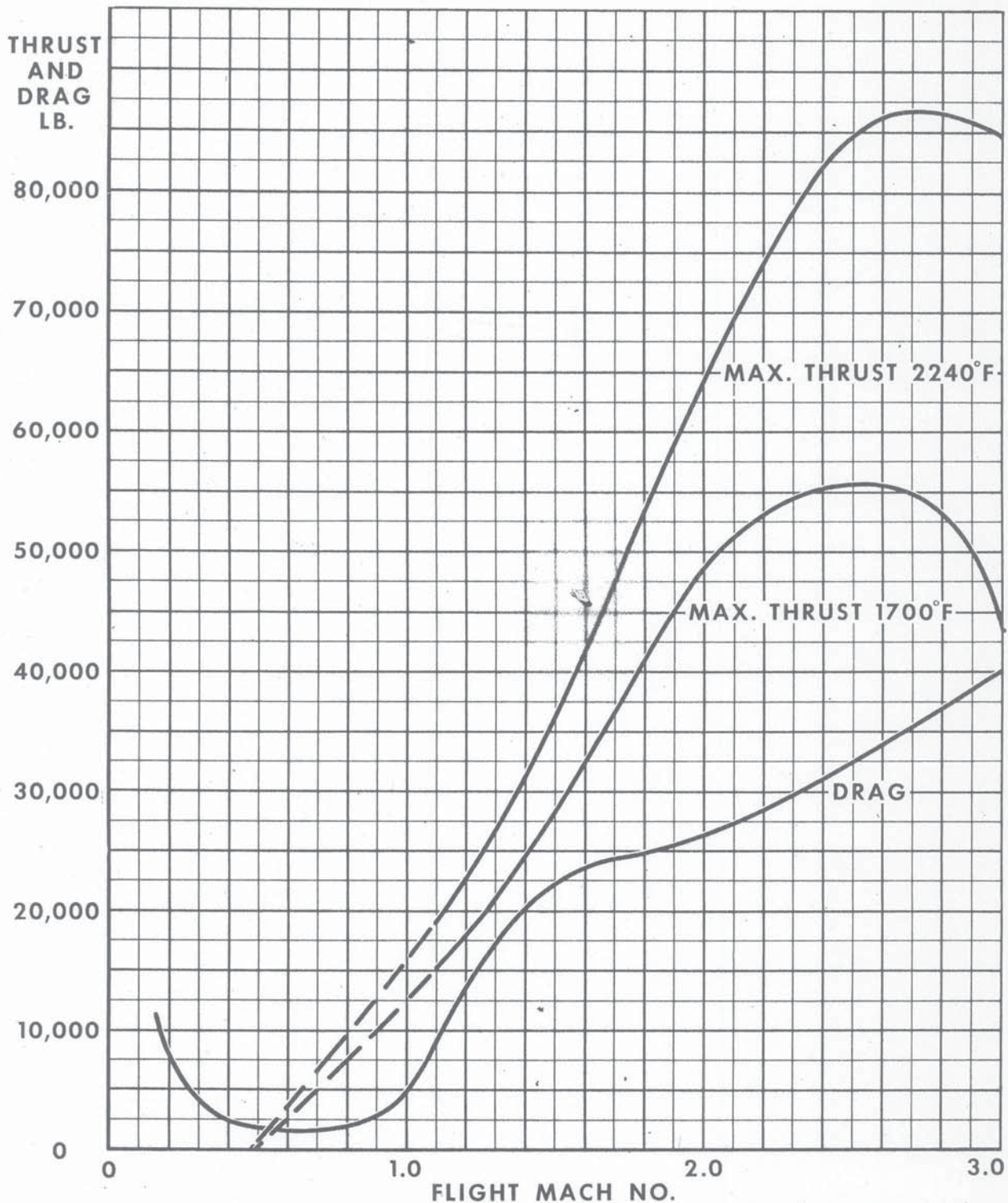
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THRUST AND DRAG VS. M. AT 36,000 FT.

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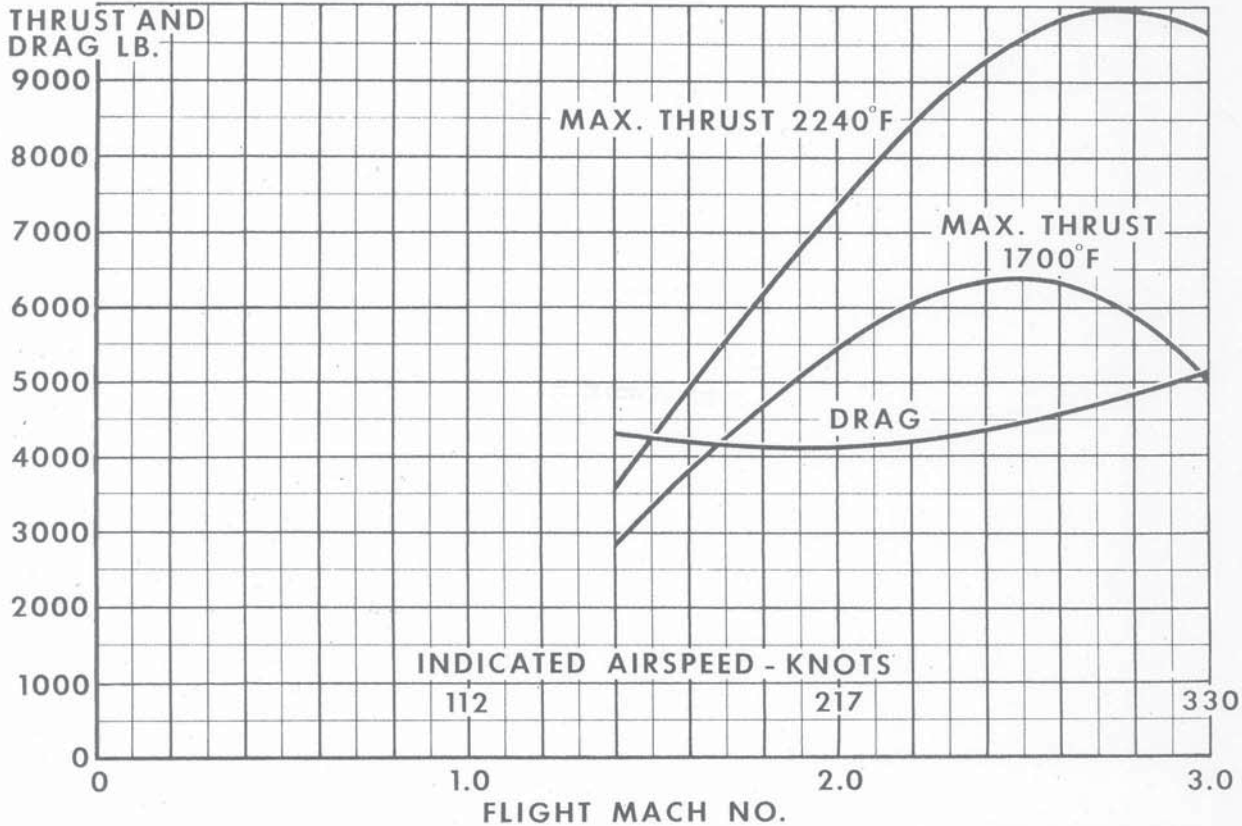
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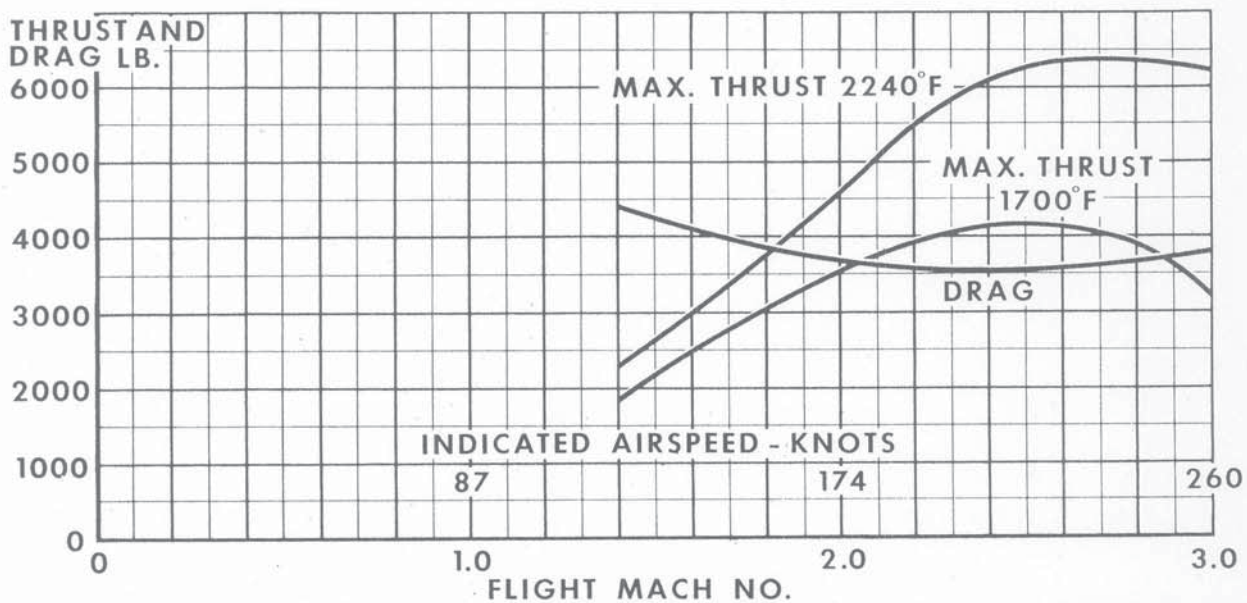
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THRUST AND DRAG VS. M. AT 80,000 FT.



THRUST AND DRAG VS. M. AT 90,000 FT.

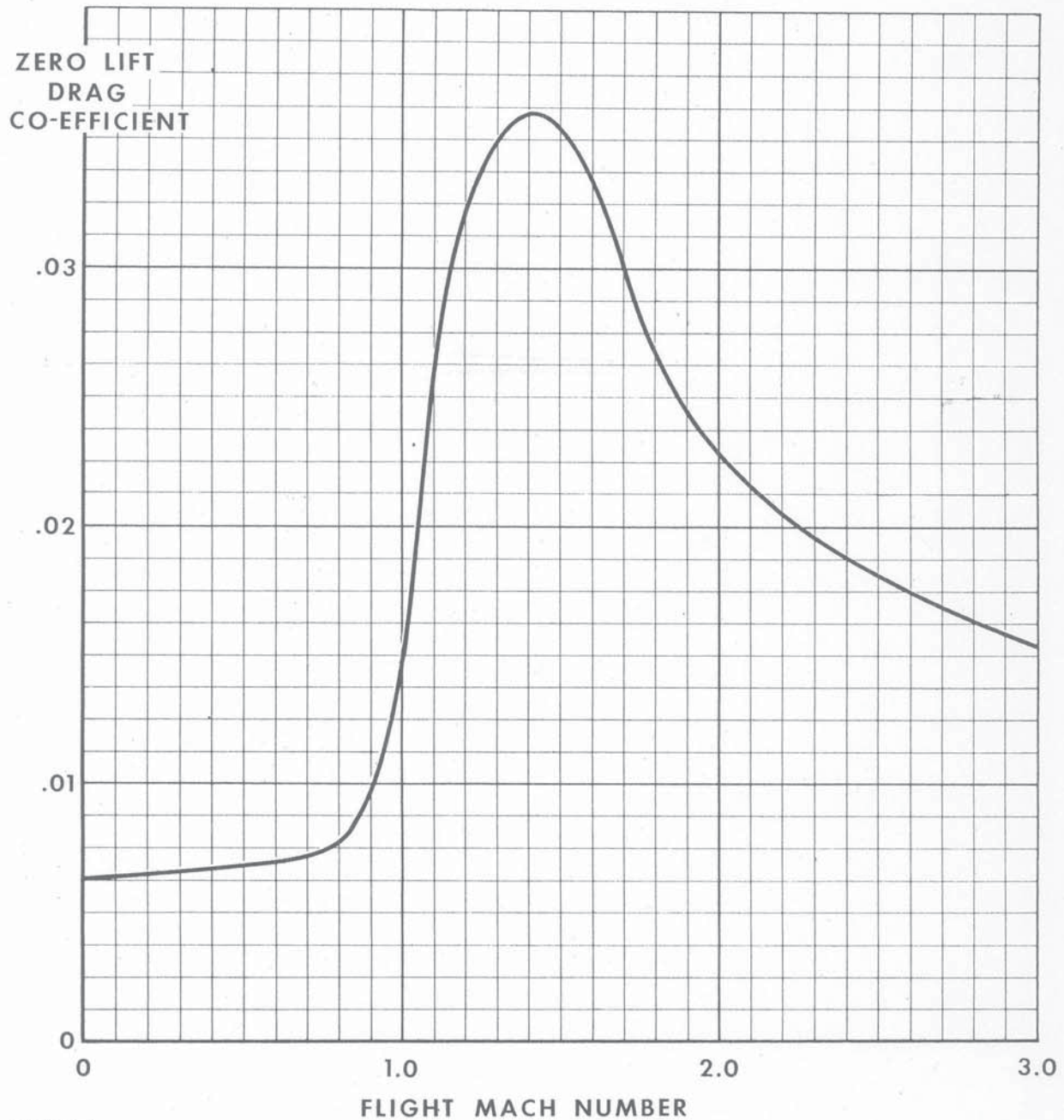
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**DUCTED FAN RAMJET AIRCRAFT
ZERO-LIFT DRAG COEFFICIENT VS.
FLIGHT MACH NUMBER**

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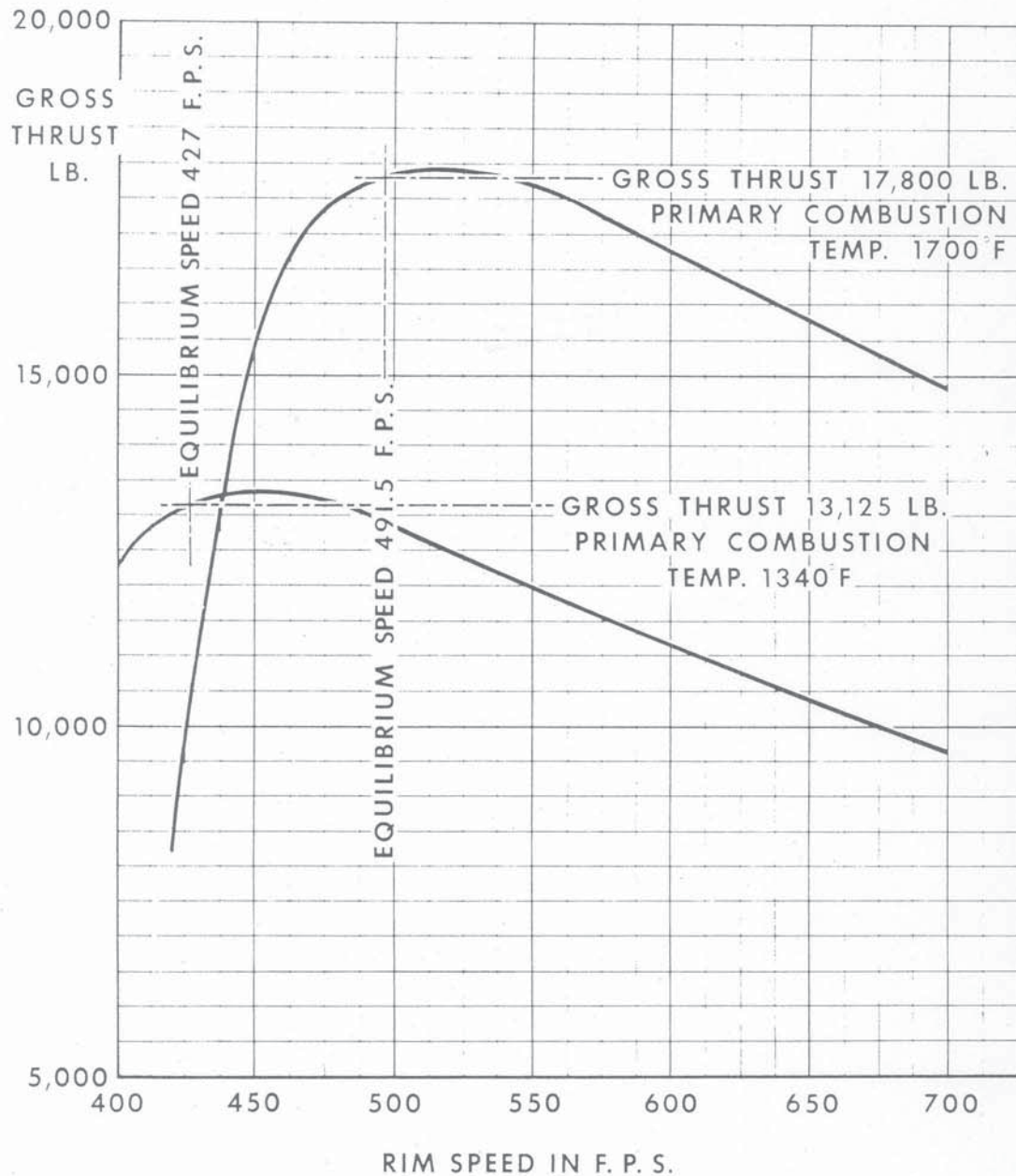
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**STATIC THRUST VS. RIM SPEED
(NO COMBUSTION IN SECONDARY FLOW)**

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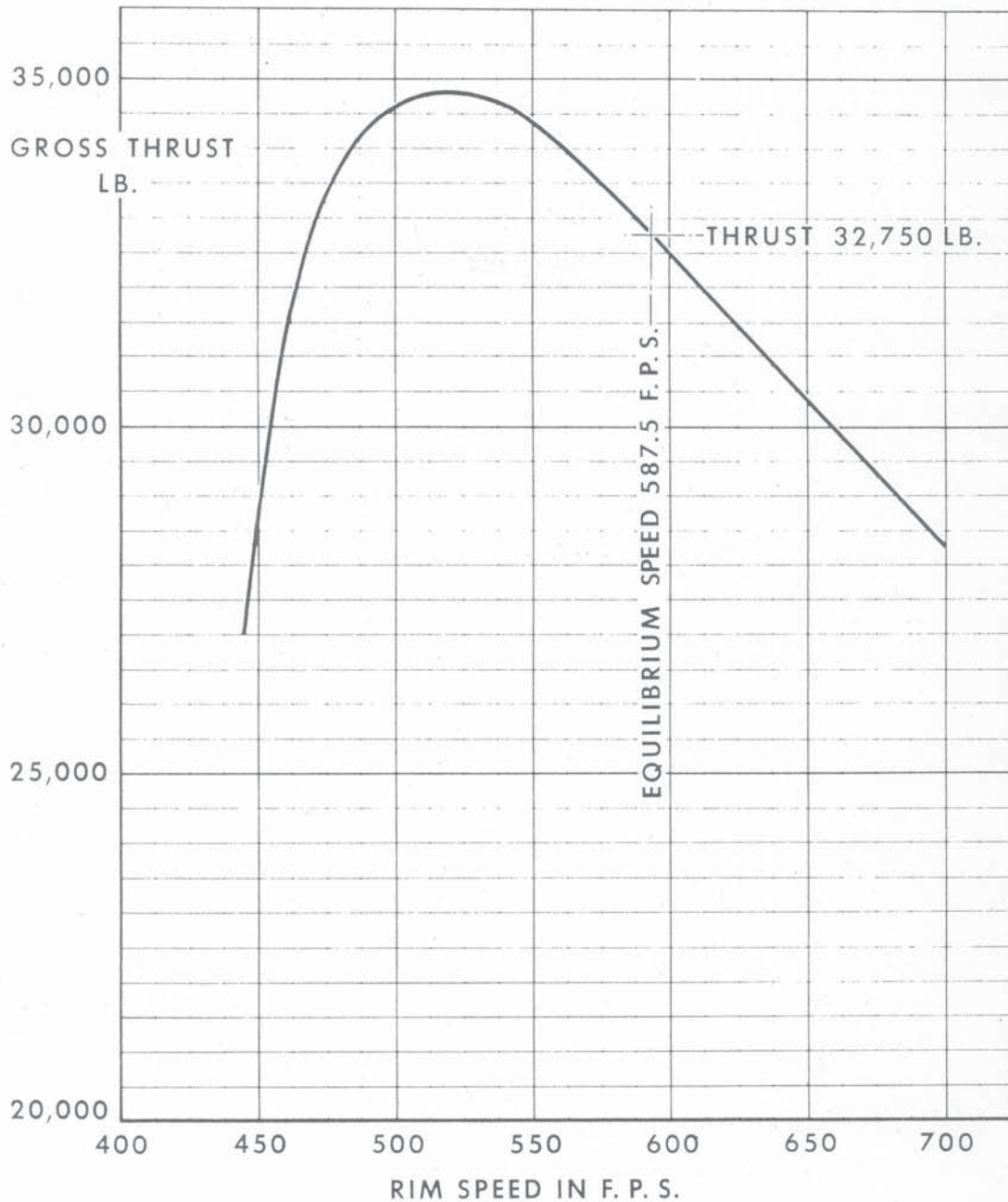
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AND THRUST LIMITED



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0003-1794-

**STATIC THRUST VS. RIM SPEED
(COMBUSTION TO 1200°K IN SECONDARY FLOW)**

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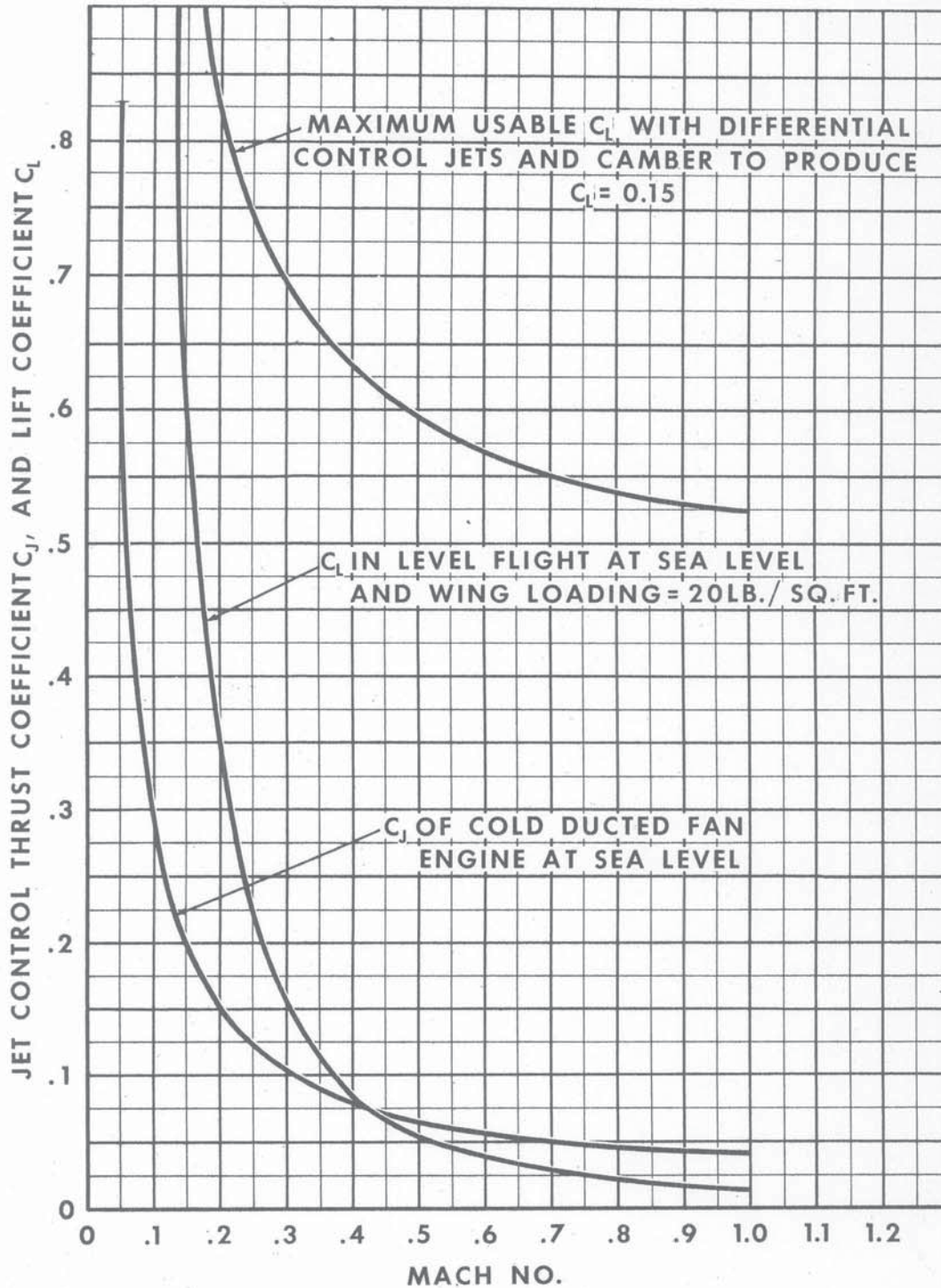
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AVRO AIRCRAFT LIMITED



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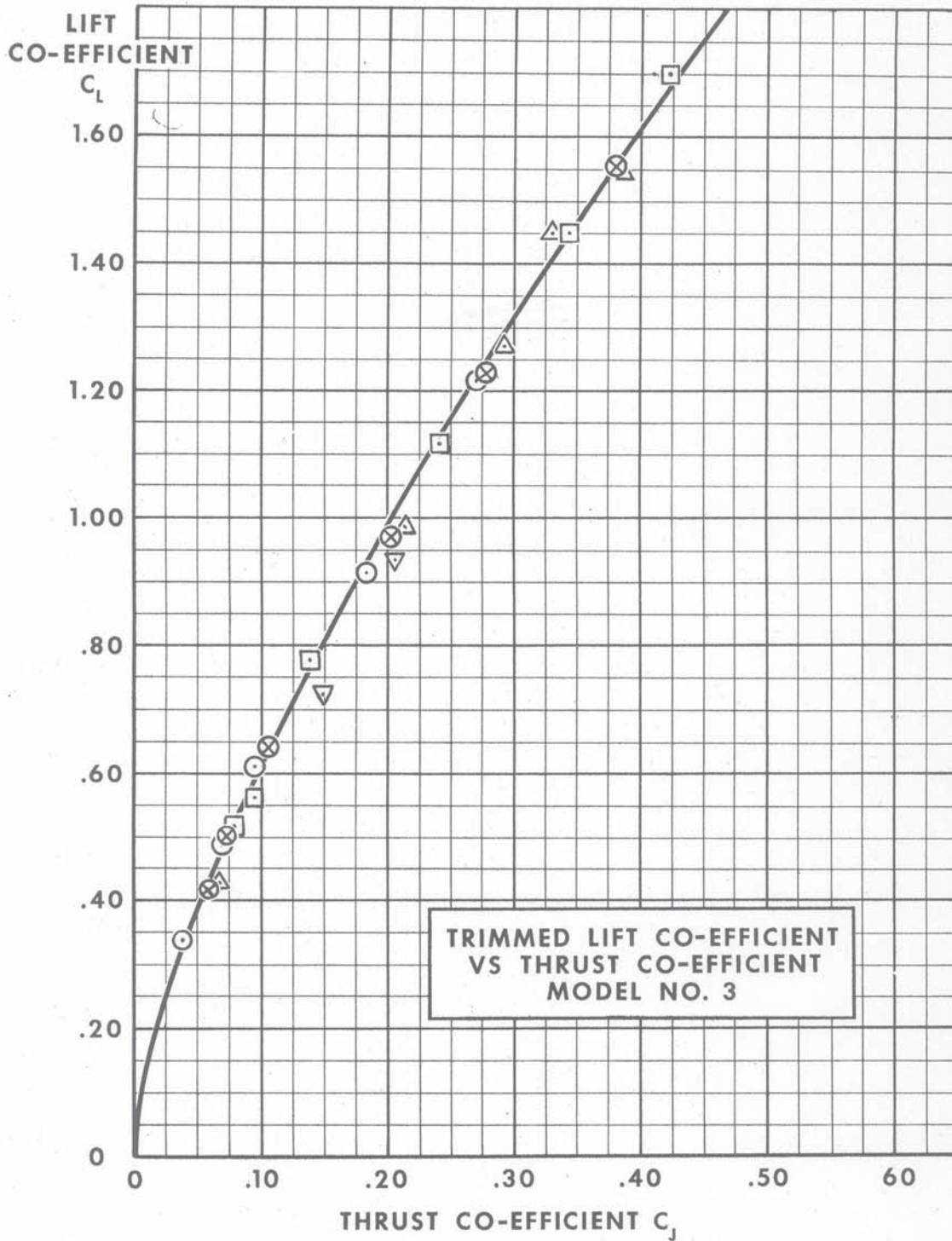
LIFT AND THRUST CHARACTERISTICS OF DUCTED FAN AIRCRAFT AT SEA LEVEL

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CONTROL EFFECTIVENESS

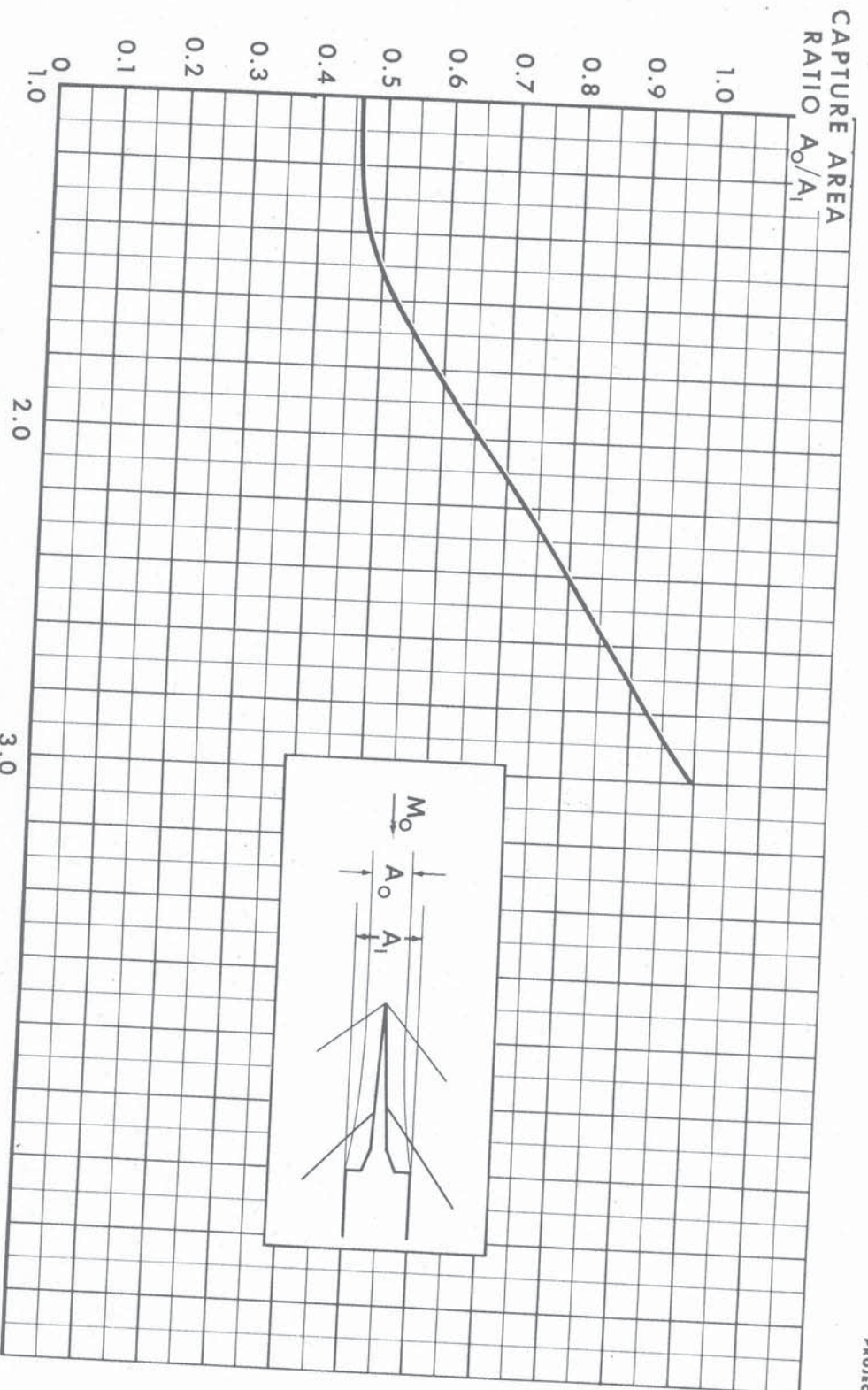
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DUCTED FAN RAMJET AIRCRAFT CAPTURE AREA RATIO VS M.

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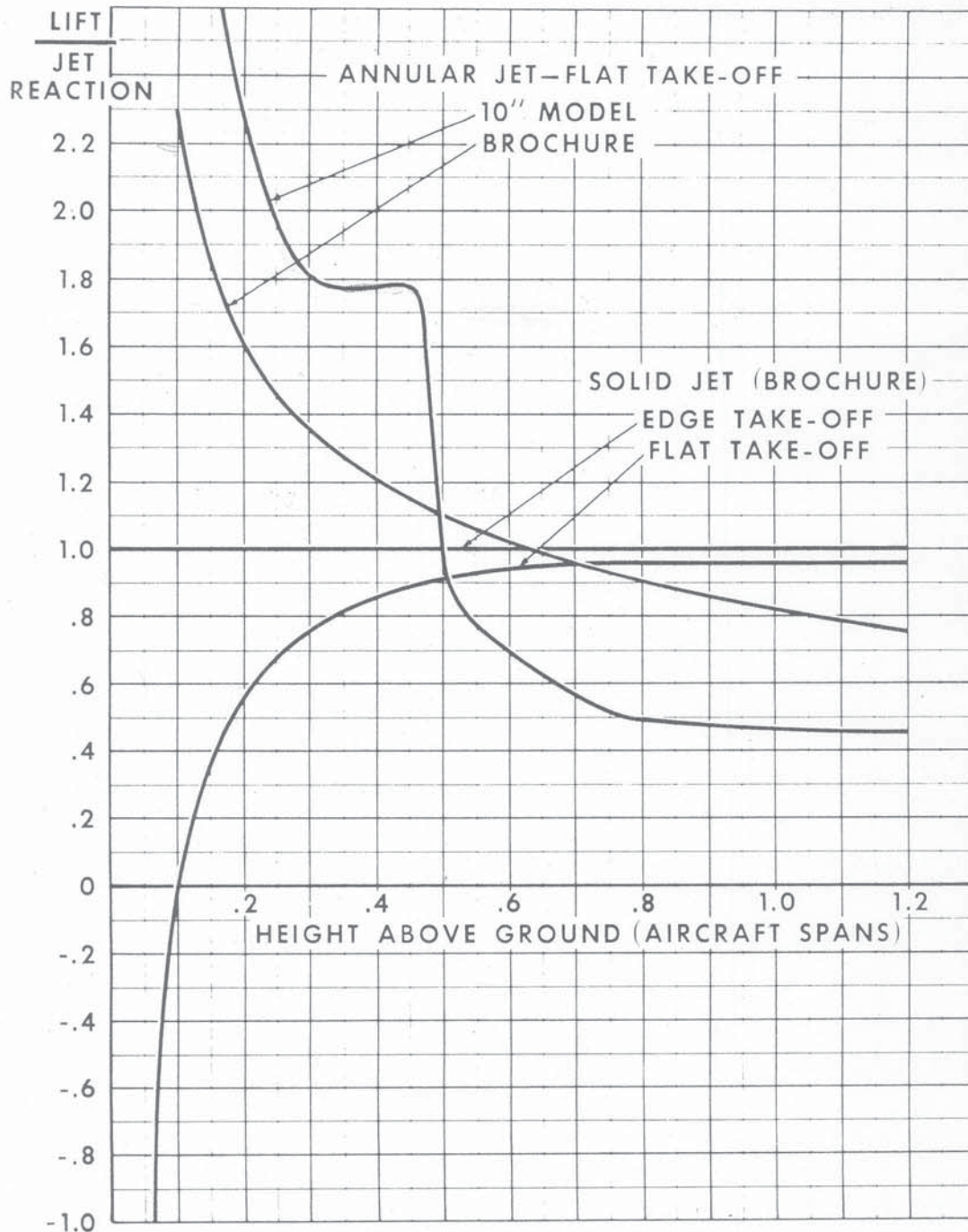
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COMPARISON OF GROUND EFFECT CURVES

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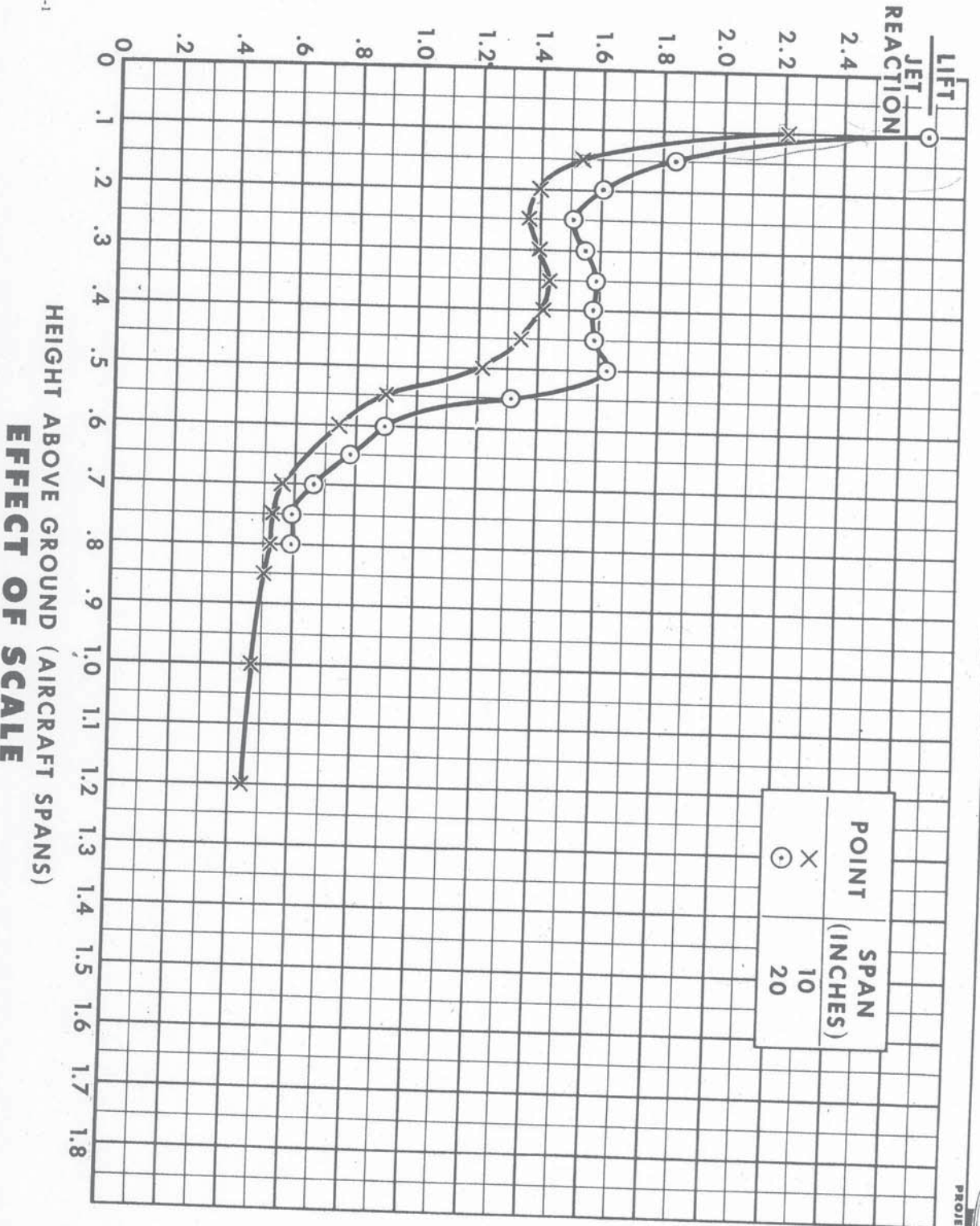
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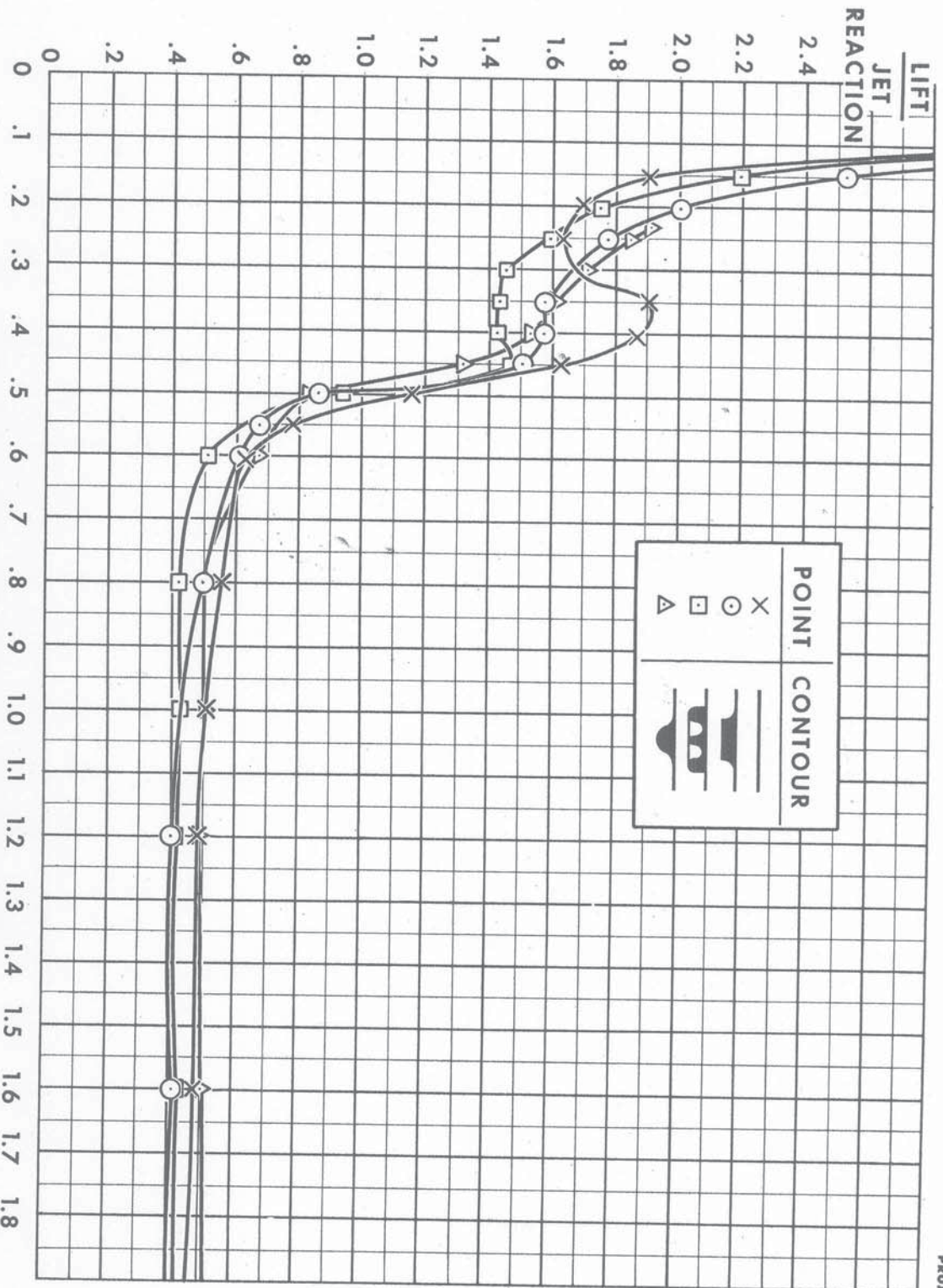
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EFFECT OF LOWER SURFACE CONTOUR

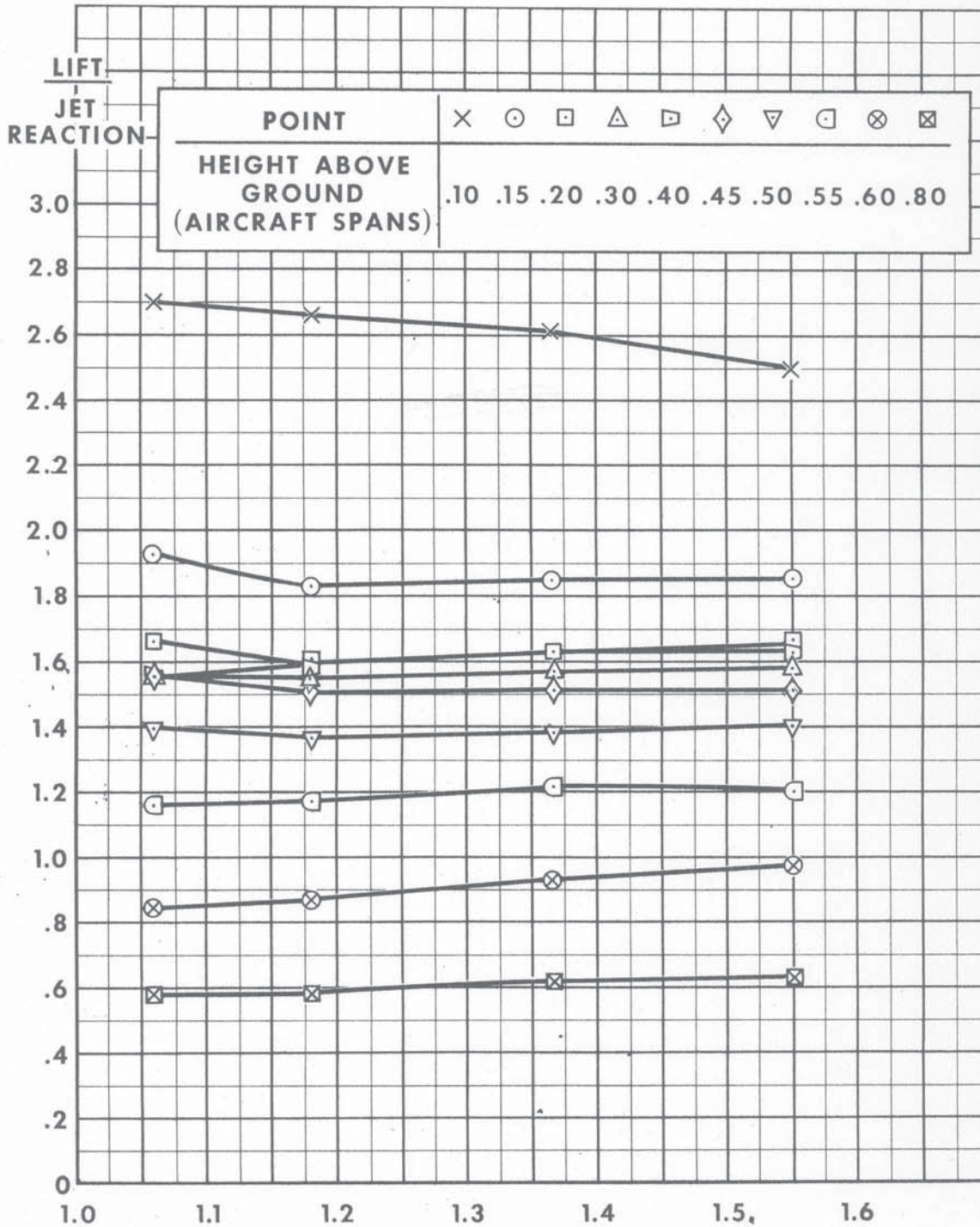
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977-10,94-1

EFFECT OF NOZZLE PRESSURE RATIO

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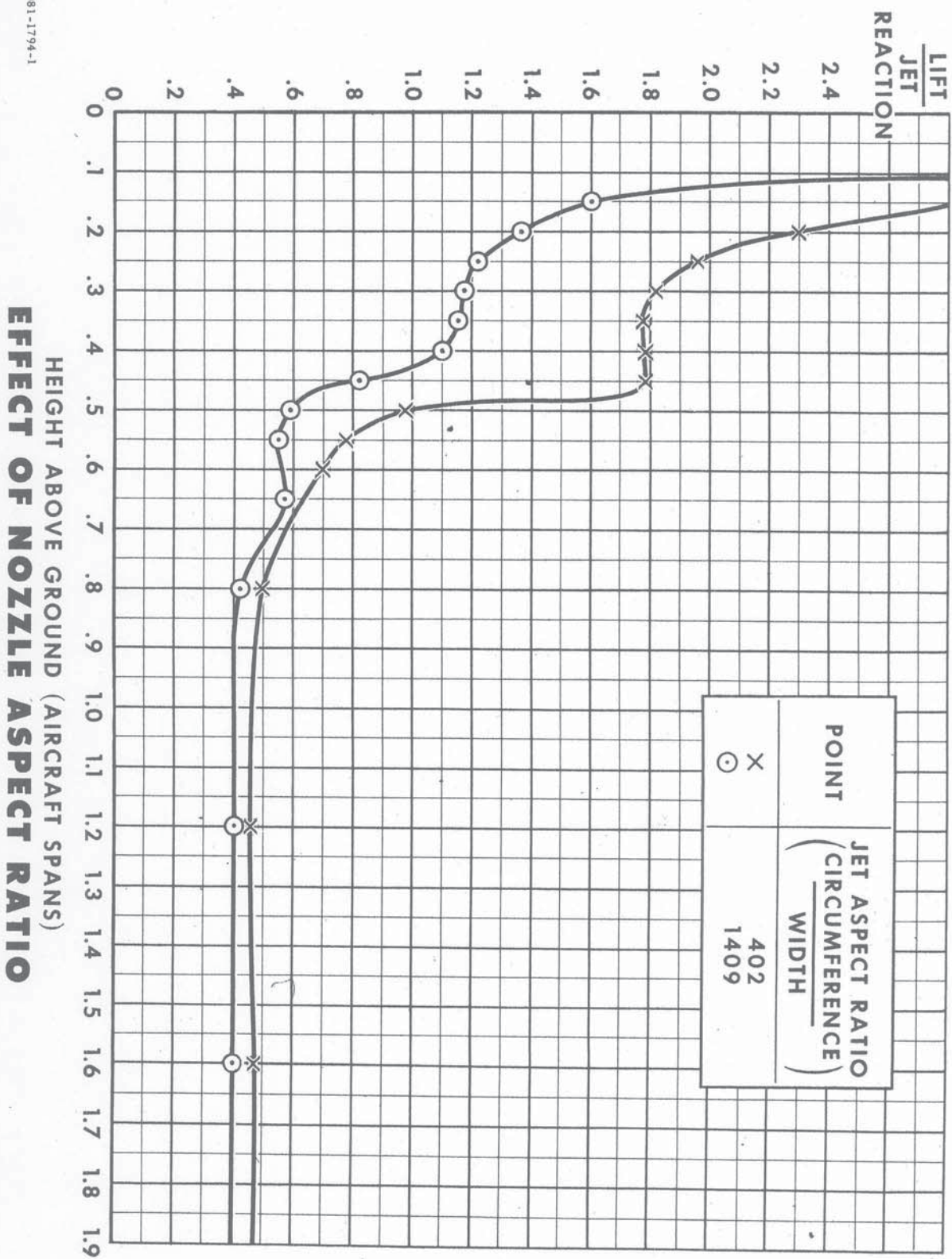
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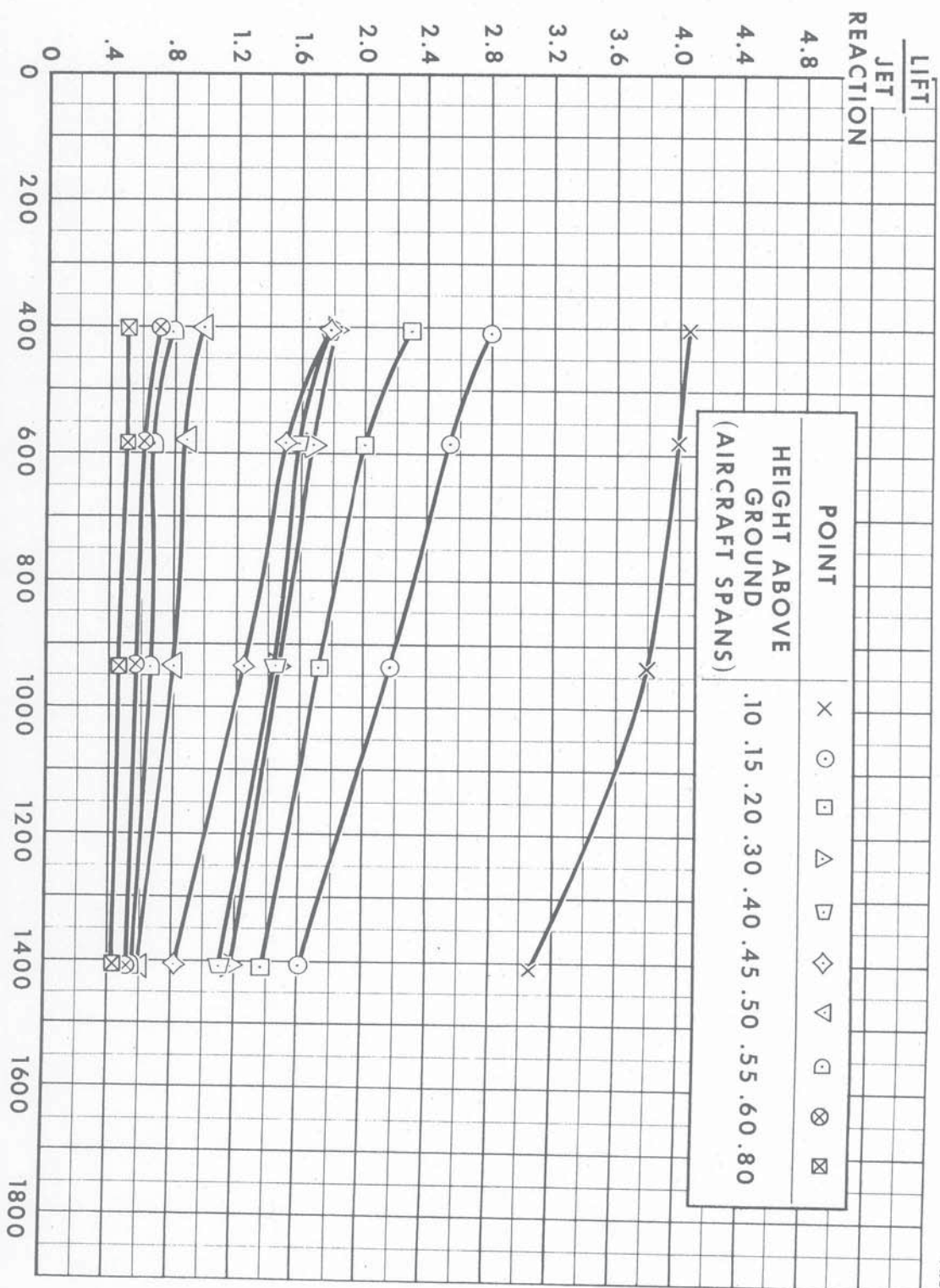
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JET ASPECT RATIO (CIRCUMFERENCE / WIDTH)
EFFECT OF NOZZLE ASPECT RATIO

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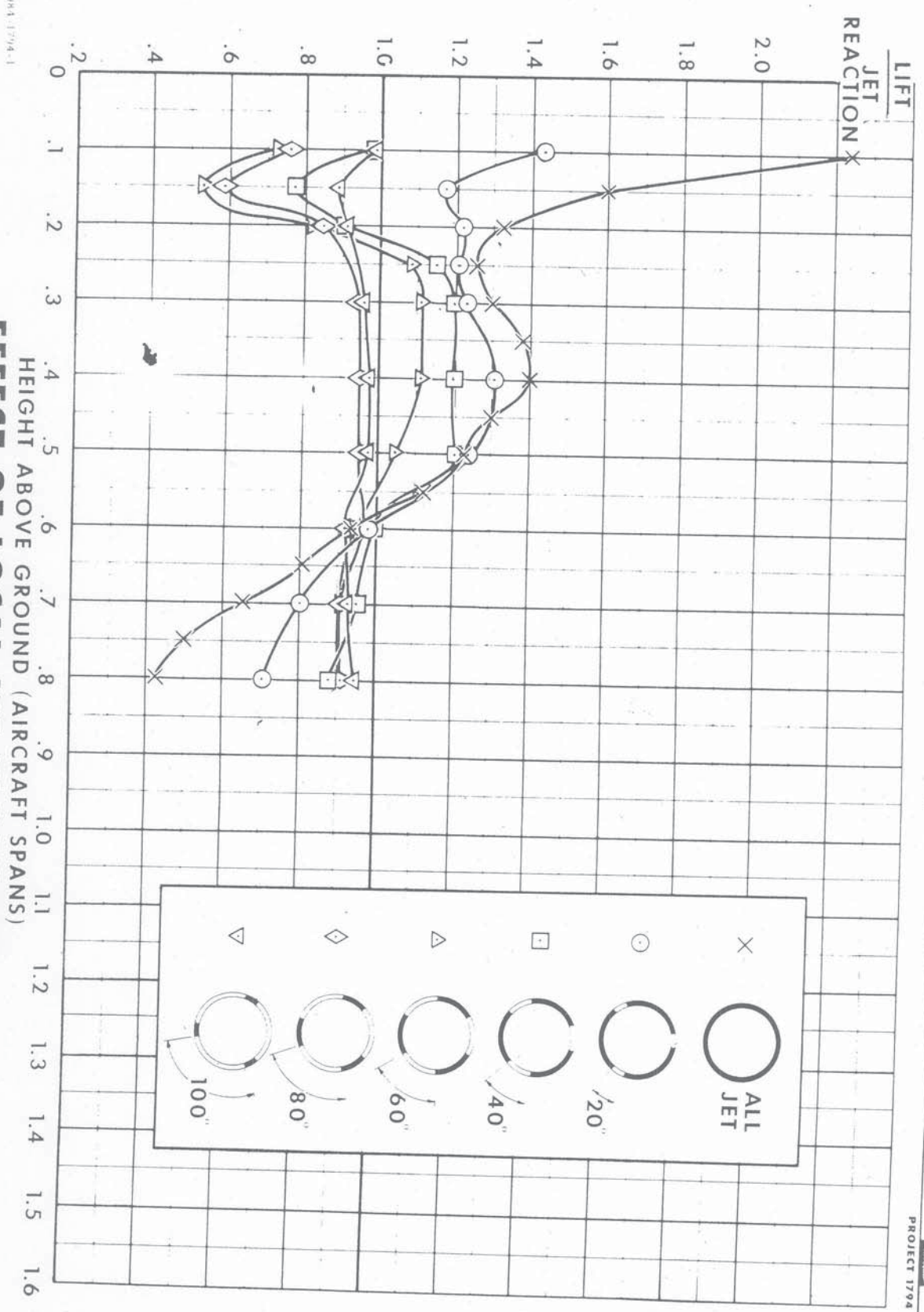
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